APPENDIX B
SOIL VAPOR WELL INSTALLATION PERMITS
AND
SUBSURFACE SURVEYS GEOPHYSICAL REPORTS

WELL INSTALLATION PERMITS

PERMIT #LMON103707
A.P.N. #321-200-38-00
EST # H86017

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM

MONITORING WELL AND BORING CONSTRUCTION AND DESTRUCTION PERMIT

SITE NAME: POWAY LANDFILL

SITE ADDRESS: 14900 POWAY ROAD, POWAY, CA 92064

PERMIT FOR: **VARIANCE TO INSTALL 3 SMALL DIAMETER VAPOR WELLS**

PERMIT APPROVAL DATE: JANUARY 25, 2006

PERMIT EXPIRES ON: MAY 25, 2006

RESPONSIBLE PARTY: COUNTY OF SAN DIEGO

PERMIT CONDITIONS:

1. This Variance does not relieve you of your professional obligations to construct the wells in a manner that will prevent the well(s) from being a potential environmental threat to water quality. The above wells must be constructed following the procedures for the installation of small diameter wells as stated in the SAM Manual, Appendix B, Section IV D (pages 19-36).

2. Wells must have a **minimum 3-foot concrete surface seal.** The surface seal shall consist of concrete able to withstand the maximum anticipated load without cracking or deteriorating. The concrete should meet Class A specifications of a minimum 4000-pound compressive strength.

3. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E- 4. (http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

4. Within 60 days of completing work, submit a well construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

5. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 338-2339.

APPROVED BY: _____ DATE: 01/25/2006
KEVIN HEATON

NOTIFIED: V.M. msg 1/25/06 mac

DEH:SAM-9075 (3/05)

COUNTY OF SAN DIEGO

DEPARTMENT OF ENVIRONMENTAL HEALTH
1255 Imperial Avenue, 3rd Floor
San Diego, CA 92101
(619)338-2228

RECEIPT NUMBER: 06-03152
Cashier: MALCA[illegible]A

APN: 321-200-38-00
DATE ISSUED: 13-JAN-2006
PERMIT: LMON T103707
SCOPE: MONITORING WELL/CATHODIC WELL
SITE ADDRESS: 14900 POWAY RD
SUBDIVISION:
CITY: Poway, CA 92064

PARCEL OWNER: COUNTY OF SAN DIEGO
ADDRESS: PUBLIC AGENCY
CITY/STATE/ZIP:, 00000

PERMIT OWNER:
ADDRESS:
CITY/STATE/ZIP:

Fees Calculated 12 Months Back

Date	Fee Code	Description	Paid to Date	This Receipt	Balance Due
13-JAN-2006	6LW25--EHO	MONITORING WELL	$0.00	$361.00	$144.00
13-JAN-2006	6LW25-ZCRO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	$0.00	-$50.50	$0.00
13-JAN-2006	6LWMAINEHO	WELL MAINTENANCE FEE	$0.00	$160.00	$0.00
13-JAN-2006	6LWMAINZCO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	$0.00	-$16.00	$0.00
		Totals:		$454.50	$144.00

Payment Code	Description	Amount
CHECK	1020	$454.5[illegible]

Tendered: $454.5[illegible]
Change: $[illegible]
Balance Due: $14[illegible]

Ck # 1023 - Deposited 1/17/06
$144.
EP

PERMIT APPLICATION
GROUNDWATER
AND VADOSE MONITORING WELLS
AND EXPLORATORY OR TEST BORINGS

OFFICE USE ONLY
PERMIT LMON # 103707
SAM CASE Y/N # _____
DATE RECEIVED: _____
FEE PAID: _____
CHECK # _____

A. **RESPONSIBLE PARTY** County of San Diego Phone 858-495-5480
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address 5201 Ruffin Road City San Diego State CA Zip 92123
Contact Person Barry Pulver Phone 858-495-5480 Ext. _____ Fax _____

B. **SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE #** _____

C. **CONSULTING FIRM** GeoSyntec Consultants
Mailing Address 11305 Rancho Bernardo Rd Ste 101 City San Diego State CA Zip 92127
Registered Professional Veryl Wittig Registration # 7115 (PG)
Contact Person Sean McClain Phone 858-674-6559 Ext. 203 Fax 858-674-6586

D. **DRILLING COMPANY** Vironex C57# 705927
Contact Name Todd Hanna
Mailing Address 1225 East McFadden Avenue City Santa Ana State CA Zip 92705-
Phone 714-647-6290 Fax 714-647-6291

E. **CONSTRUCTION INFORMATION**

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	___
☐ Vadose	___
☐ Boring	___
☒ Other	3

Soil Vapor Wells

NUMBER OF WELLS TO BE DESTROYED

☐ ___

MATERIALS TO BE USED

CASING
Not Applicable _____
Type _____
Gauge _____
Diameter _____
Well Screen Size _____
Filter Pack _____

SEAL/BORING BACKFILL
☐ Neat Cement
☒ Cement & Bentonite
☐ Sand-Cement
☐ Bentonite
☐ Other
Borehole diameter _____

Drilling Method
☐ Auger ☐ Air Rotary
☐ Mud Rotary ☒ Other
☐ Percussion Direct Push

PROPOSED CONSTRUCTION
Estimated groundwater depth: _____ ft.
Estimated depth of boring _____ ft.

Concrete surface seal	0 to 3
Annular seal	See Attached Diagram
Bentonite transition seal	_____ to _____
Filter Pack	_____ to _____
Perforation	_____ to _____

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE _____ DATE 1-10-06

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

PG/RCE SIGNATURE _____ DATE 1-12-06

F. SITE INFORMATION

1. **ASSESSOR'S PARCEL NUMBER** 321-200-38
   Site Name Poway Landfill
   Site Address 14900 Poway Road City Poway Zip 92064-

   PROPERTY OWNER County of San Diego
   Phone 858-495-5480 Ext. Fax _____
   Mailing Address 5201 Ruffin Road City San Diego State CA Zip 92123-

   NUMBER OF WELLS 3 **TYPE OF WELLS** Soil Vapor

2. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

3. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

4. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

Permit Fees In Effect for July 1, 2005 - June 30, 2006

G. FEES (in effect beginning July 1, 2005, through June 30, 2006)

The County Board of Supervisors authorized a *10% credit, for the Fiscal Year ending June 30, 2006,* to be applied to the Department of Environmental Health customers. This credit is being provided to qualified fee-based programs that have contributed to the cost reduction/cost containment/cost avoidance efforts initiated by the Department. This *fee adjustment, for the Fiscal Year ending June 30, 2006,* is applicable to fees and permits due and/or obtained during this period. The 10% is not applicable to enforcement fees or fees relating to non-compliance of permit regulations.

ACTIVITY	FEE SCHEDULE FEE -- ONE-TIME FISCAL YEAR 10% CREDIT	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	$185.00 for the first monitoring well $185.00 – 10% <$18.50> =	1 x $166.50 $ 166.50
Permit for Well Maintenance Inspection **(Valid for three years)**	$100.00 for first well maintenance inspection $100.00 – 10% <$10.00> =	1 x $ 90.00 $
Each Additional New Well	$160.00 for each additional well installation $160.00 – 10% <$16.00> =	2 x $144.00 $ 288.00
	$ 30.00 for each additional well maintenance inspection $ 30.00 – 10% <$ 3.00> =	x $ 27.00 $
Permit for Borings Only *(CPT's, Hydropunch, Geoprobes,* Temporary Well Points, etc.)	$185.00 for the first boring $185.00 – 10% <$18.50> = $ 50.00 for each additional boring $ 50.00 – 10% <$ 5.00> =	1 x $166.50 $ x $ 45.00 $
Permit for Well Destructions Only	$185.00 for the first destruction $185.00 – 10% <$18.50> = $120.00 for each additional destruction $120.00 – 10% <$12.00> =	1 x $166.50 $ x $108.00 $
Permit for any Combination of Well Installations, Borings, & Destructions *(except UST backfill permit)* Permit for any Combination of Well Installations, Borings, & Destructions *(except UST backfill permit)*	The first activity will be $185.00. $185.00 – 10% <$18.50> = Additional activities will be as follows: $160.00 for each additional well $160.00 – 10% <$16.00> = $100.00 for first well maintenance inspection $100.00 – 10% <$10.00> = $ 30.00 for each additional well maintenance inspection $ 30.00 – 10% <$ 3.00> = $ 50.00 for each additional boring $ 50.00 – 10% <$ 5.00> = $120.00 for each well destruction $120.00 – 10% <$12.00> =	1 x $166.50 $ – x $144.00 $ 1 x $ 90.00$ x $ 27.00 $ x $ 45.00 $ x $108.00 $
	TOTAL COST OF PERMIT	$ 454.50

Permit for Underground Storage Tank Monitoring System In Backfill *(i.e. Enhanced Leak Detection)*	(Flat Fee) **$320.00 – 10% <$32.00> =**	$288.00

H. QUESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.

1. If wells are to be destroyed, provide a description of method of destruction _____

2. What is the purpose of the well/boring investigation?

   ☒ a. Part of an ongoing site assessment case in which DEH or another government regulator is the lead agency.

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☐ c. Geotechnical investigation for proposed construction, land stabilization or:

   ☐ d. Other: _____

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? Soil vapor wells will be constructed immediately after borings reach target depths.

4. What field procedures will be utilized to determine if contamination exists? No soil or groudnwater will be removed from borings.

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? No samples will be collected during installation of vapor wells.

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? After vapor well installation , soil vapor samples will be analyzed for VOCs by EPA Method TO-15 and fixed gases by ASTM D 1946.

7. How will samples be transported and preserved? Samples will be handled using chain of custody procedures.

8. What sampling methods will be used? Soil vapor samples will be collected in dedicated, laboratory cleaned Summa canisters.

9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www/sdcounty.ca.gov/deh/lwq/sam/monitoring_well.html). :Yes, please see attached well construction diagram.

10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. NO

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination? Drilling quipment will be cleaned prior to use.

12. What methods will be used to clean sampling equipment? Re-usable drilling equipment will be washed using three bucket wash method

13. What cleaning method will be used to clean casing and screen prior to installation? New dedicated materials will be used in construction of soil vapor monitor wells.

Crystal, Marisue

From: DBaumwirt@GeoSyntec.com
Sent: Thursday, January 05, 2006 5:08 PM
To: Crystal, Marisue
Cc: CGale@GeoSyntec.com
Subject: Permanent soil vapor well design
Attachments: image001.png; perm.soil.vapor.well.design.pdf

Hello Marisue,

Per our conversation earlier today, I have attached a diagram of my proposed well construction. Unfortunately I will be out of the office tomorrow (Friday), but if you wouldn't mind responding to my associate Chris Gale at cgale@geosyntec.com would be a huge help. If you have any questions or suggestions please let Chris know. We really appreciate your help with this. I believe that the only "variance" with this construction design is found in the 3x3 foot surface completion pad, but if you see any other variances please let us know.

Thank you very much in advance for your help.

Douglas Jorel Baumwirt
Geologist
GeoSyntec Consultants
11505 Rancho Bernardo Road, Suite 101
San Diego, CA 92127
Ph: 858.674.6559 x 225
Fax 858.674.6585
GeoSyntec Consultants
www.geosyntec.com

Marisue,

This looks ok. The 1 foot dry bentonite above the sand is to prevent the moisture from the hydrated bentonite impacting the Porus tip of the vapor probe.

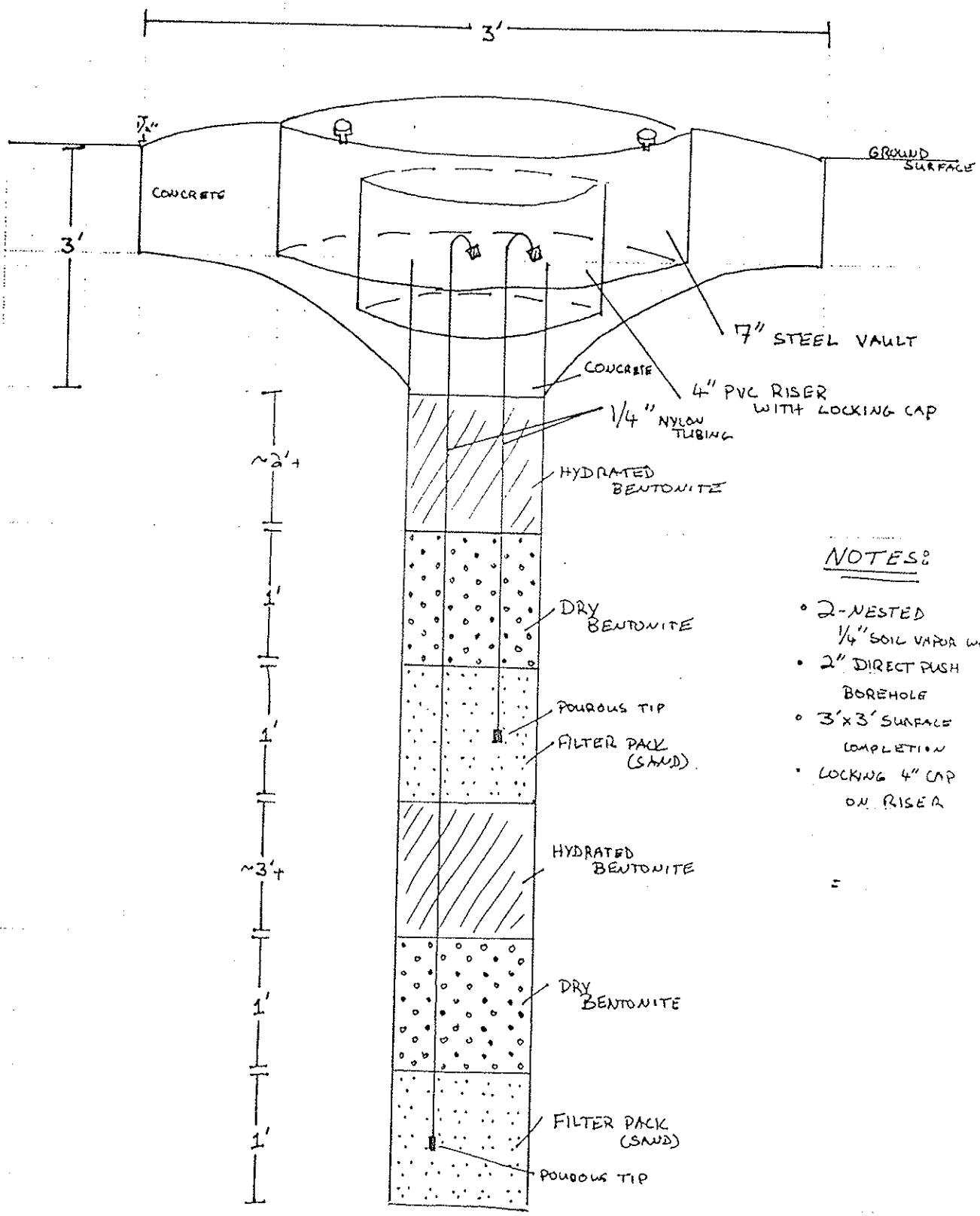
1/9/06

GeoSyntec Consultants

Page _____ of _____

Written by: _____ Date: 06/01/05 (YY/MM/DD) Reviewed by: _____ Date: ___/___/___ (YY/MM/DD)

Client: _____ Project: _____ Project/Proposal No.: _____ Task No.: _____



NOTES:

- 2-NESTED 1/4" SOIL VAPOR WELLS
- 2" DIRECT PUSH BOREHOLE
- 3'x3' SURFACE COMPLETION
- LOCKING 4" CAP ON RISER

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2315/1-800-253-9933
www.sdcounty.ca.gov/deh/lwq

RICHARD HAAS
ASSISTANT DIRECTOR

PROPERTY OWNER RESPONSIBILITY ACKNOWLEDGEMENT

Proposed locations for subsurface work:

Property Address: Poway Landfill, 14900 Poway Rd. Poway, CA

Assessor's Parcel Number (APN): 321-200-38

I, _____, owner of the property/properties listed above, give my permission to

_____ (consulting company, contractor) to conduct the following work at the locations stated above.

☑ Install 3 monitoring wells ☐ Destroy _____ monitoring wells ☐ Drill _____ soil borings

The person who causes to have a monitoring well installed or an existing well destroyed on this property is defined as the *Responsible Party*. San Diego County Code, Section 67.424, states that: "Monitoring wells shall be maintained to meet construction or destruction standards. If a monitoring well does not meet construction or destruction standards, the *Responsible Party* must repair, reconstruct or destroy the monitoring well so it meets the standards. The property owner, if different than the *Responsible Party*, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the *Responsible Party* does not complete the necessary actions."

A soil boring is used specifically to sample soil and, because there are construction and destruction standards, is included in the definition of a monitoring well even though no maintenance is required. These standards are outlined in the County of San Diego Site Assessment and Mitigation (SAM) Manual and the State of California Well Standards Bulletin 74-90.

I understand that _____ (registered professional) of _____ (consulting company) and an authorized signer for _____ (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

I also understand that if either the registered professional and/or the licensed drilling company should fail in their responsibilities as defined in San Diego County Code, Section 67.424, I, as the property owner, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the Responsible Party does not complete the necessary actions.

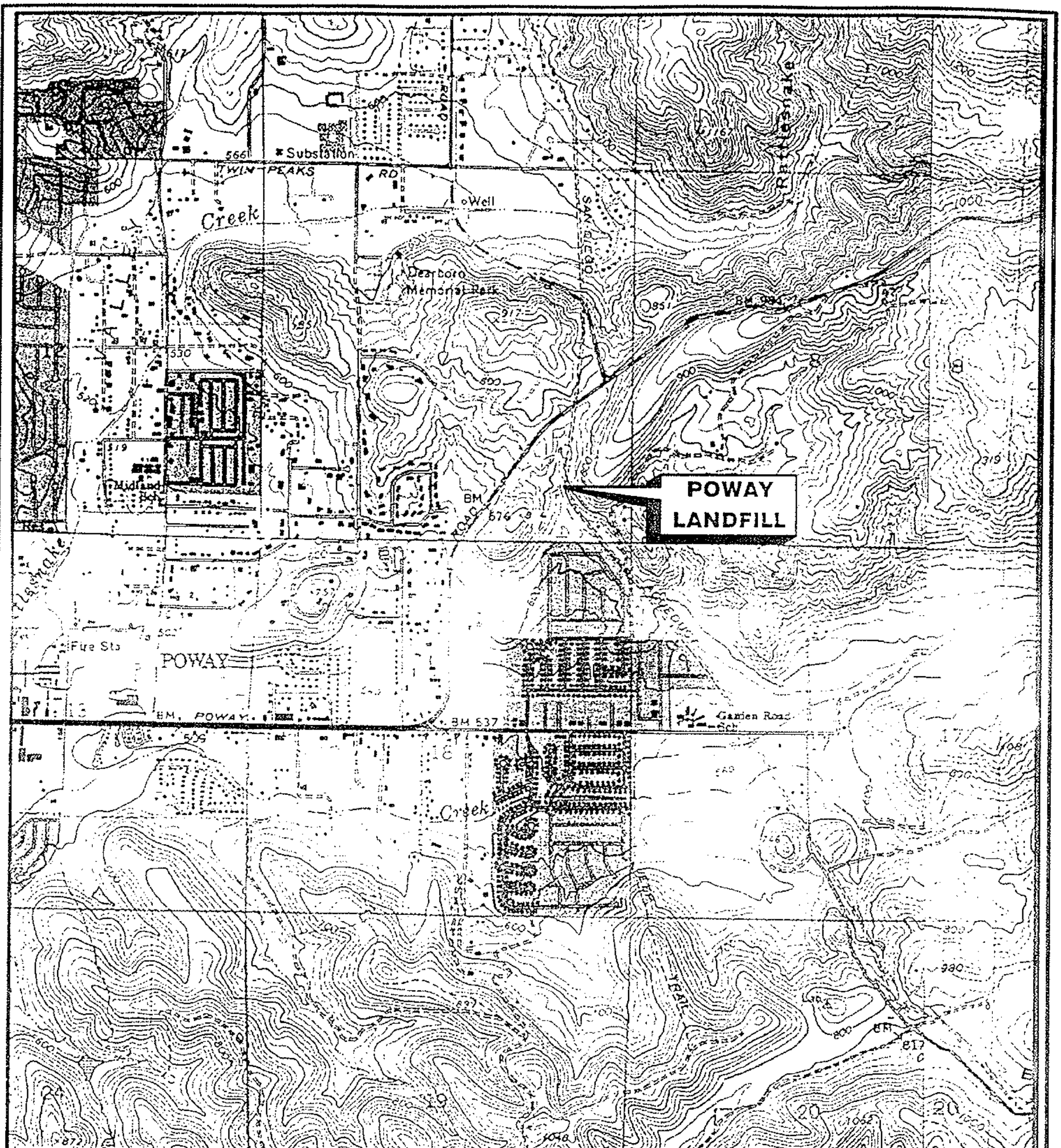
The scope of work covered by this Acknowledgement will expire one year from the date of the property owner's signature below. If an extension of time beyond one year is required to complete the proposed drilling activities or additional work is proposed, a new Property Owner Responsibility Agreement will be required.

Property Owner Signature: _____ Date: 1-10-05

Print Name: Barry Powell Title: Hydrogeologist

Company: County of San Diego Landfill Management

Mailing Address: 5201 Ruffin Rd. San Diego, CA 92123



SOURCE:
NATIONAL GEOGRAPHIC (CALIFORNIA)
SEAMLESS USGS TOPOGRAPHIC MAPS ON CD-ROM
POWERED BY TOPO

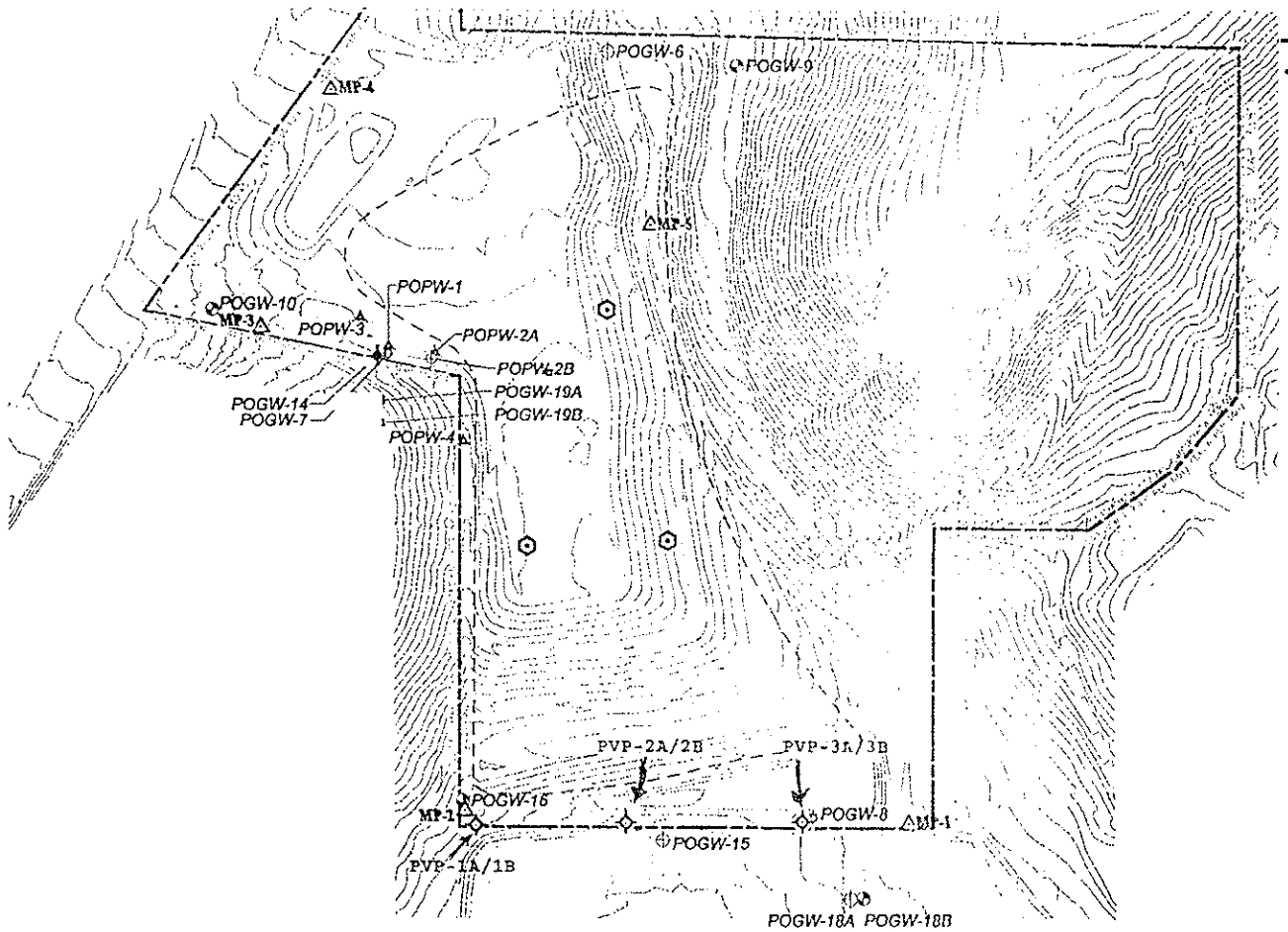
N

2,000 1,000 0 2,000 4,000

SCALE IN FEET

GEOSYNTEC CONSULTANTS

SITE LOCATION POWAY LANDFILL POWAY, CALIFORNIA	FIGURE NO. 1 PROJECT NO. NCP2005 DATE: NOVEMBER 2005



LEGEND

- PROPOSED NESTED VAPOR MONITORING PROBE
- PROPOSED UPPER FRACTURE ZONE GROUNDWATER MONITOR WELL
- PROPOSED INTERMEDIATE FRACTURE ZONE GROUNDWATER MONITOR WELL
- PROPOSED LANDFILL GAS EXTRACTION WELL
- POGW-6 ALLUVIAL GROUNDWATER MONITOR WELL
- POGW-9 UPPER FRACTURE ZONE GROUNDWATER MONITOR WELL
- POPW-1 UPPER FRACTURE ZONE GROUNDWATER PIEZOMETER
- POPW-2B INTERMEDIATE FRACTURE ZONE GROUNDWATER PIEZOMETER
- POGW-14 LOWER FRACTURE ZONE GROUNDWATER MONITOR WELL
- MP-1 LANDFILL GAS MONITORING PROBE
- POGW-8 DESTROYED GROUNDWATER MONITOR WELL
- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE TRASH/REFUSE BOUNDARY
- EXISTING PAVED ROAD
- EXISTING DIRT ROAD

N

200 100 0 200

SCALE IN FEET

BASE MAP REFERENCE:
Stewart Geo Technologies
July 2002

GeoSyntec Consultants

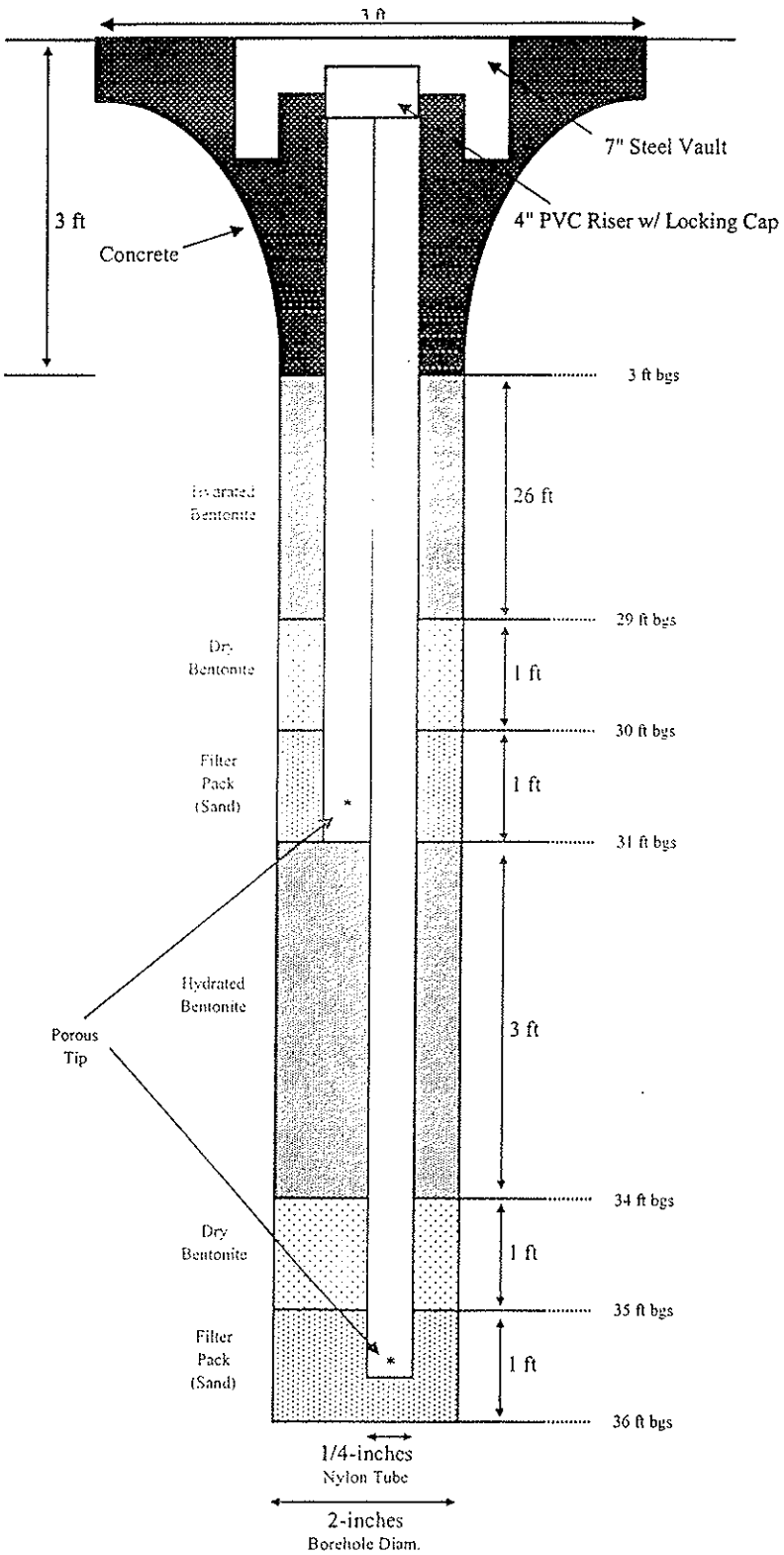
Proposed Vapor Well Location
POWAY LANDFILL
POWAY, CALIFORNIA

FIGURE NO.	2
PROJECT NO.	SC0233
DATE:	DECEMBER 2005

GeoSyntec Consultants

Proposed Well Construction

Site:	Poway Landfill	Date:	1/10/06
Well ID:	PVP-1A/1B	Drilling Method:	Direct Push
Drilling Company:	Vironex	Proposed Boring Depth:	36 ft bgs
Drillers:		Proposed Boring Diameter:	2-inches
Geologist:	Chris Gale	Proposed Well Depth:	31-36 ft bgs
		Well Diameter:	2 nested wells, each 1/4 -inches diameter



Proposed Well Construction:

Material: 1/4 " nylon tubing

Inside Diamter:

Proposed Filter Pack:

Type/Brand: Sand

Amount Used:

Placement Method: Tremie

Proposed Seal: &

Type/Brand: Bentonite chips/pellets

Amount Used:

Vol. Fluid Added:

Set-up Time:

Placement Method: Tremmie

Proposed Grout:

Type/Brand: Cement

Amount Used:

Vol. Fluid Added:

Placement Method:

Proposed Well Completion:

Above Grade / Below Grade / Flush Mounted

Guard Posts? Y / N

Pad Size: 3X3

Cover Type/Size: 7-inch steel Flush Mount

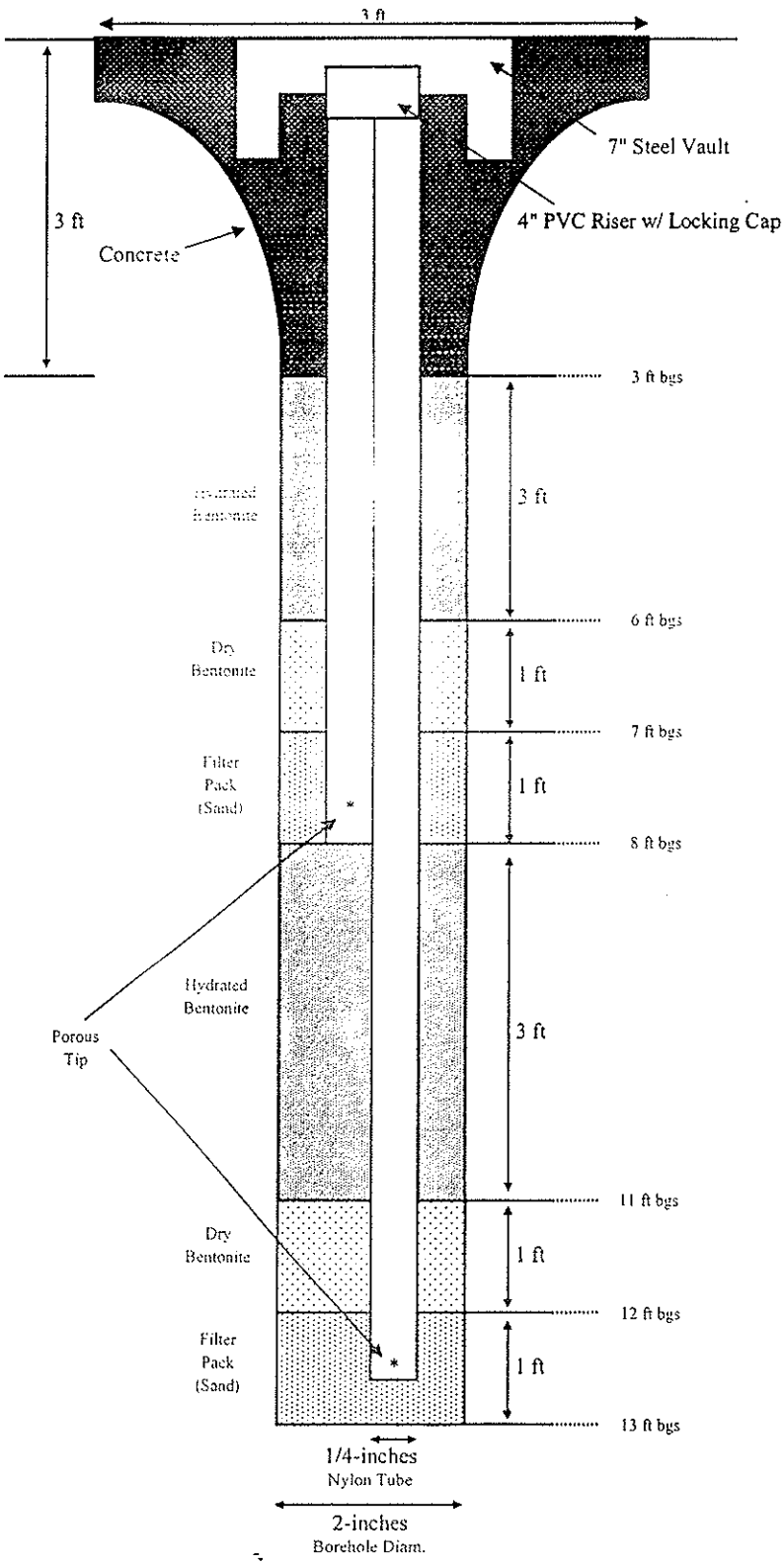
Comments:

Geologist Signature:

GeoSyntec Consultants

Proposed Well Construction

Site:	Poway Landfill	Date:	1/10/06
Well ID:	PVP-2A/2B	Drilling Method:	Direct Push
Drilling Company:	Vironex	Proposed Boring Depth:	13 ft bgs
Drillers:		Proposed Boring Diameter:	2-inches
Geologist:	Chris Gale	Proposed Well Depth:	8-13 ft bgs
		Well Diameter:	2 nested wells, each 1/4 -inches diameter



Proposed Well Construction:

Material: 1/4 " nylon tubing

Inside Diamter:

Proposed Filter Pack:

Type/Brand: Sand

Amount Used:

Placement Method: Tremie

Proposed Seal: &

Type/Brand: Bentonite chips/pellets

Amount Used:

Vol. Fluid Added:

Set-up Time:

Placement Method: Tremmie

Proposed Grout:

Type/Brand: Cement

Amount Used:

Vol. Fluid Added:

Placement Method:

Proposed Well Completion:

Above Grade / Below Grade / **Flush Mounted**

Guard Posts? Y / N

Pad Size: 3X3

Cover Type/Size: 7-inch steel Flush Mount

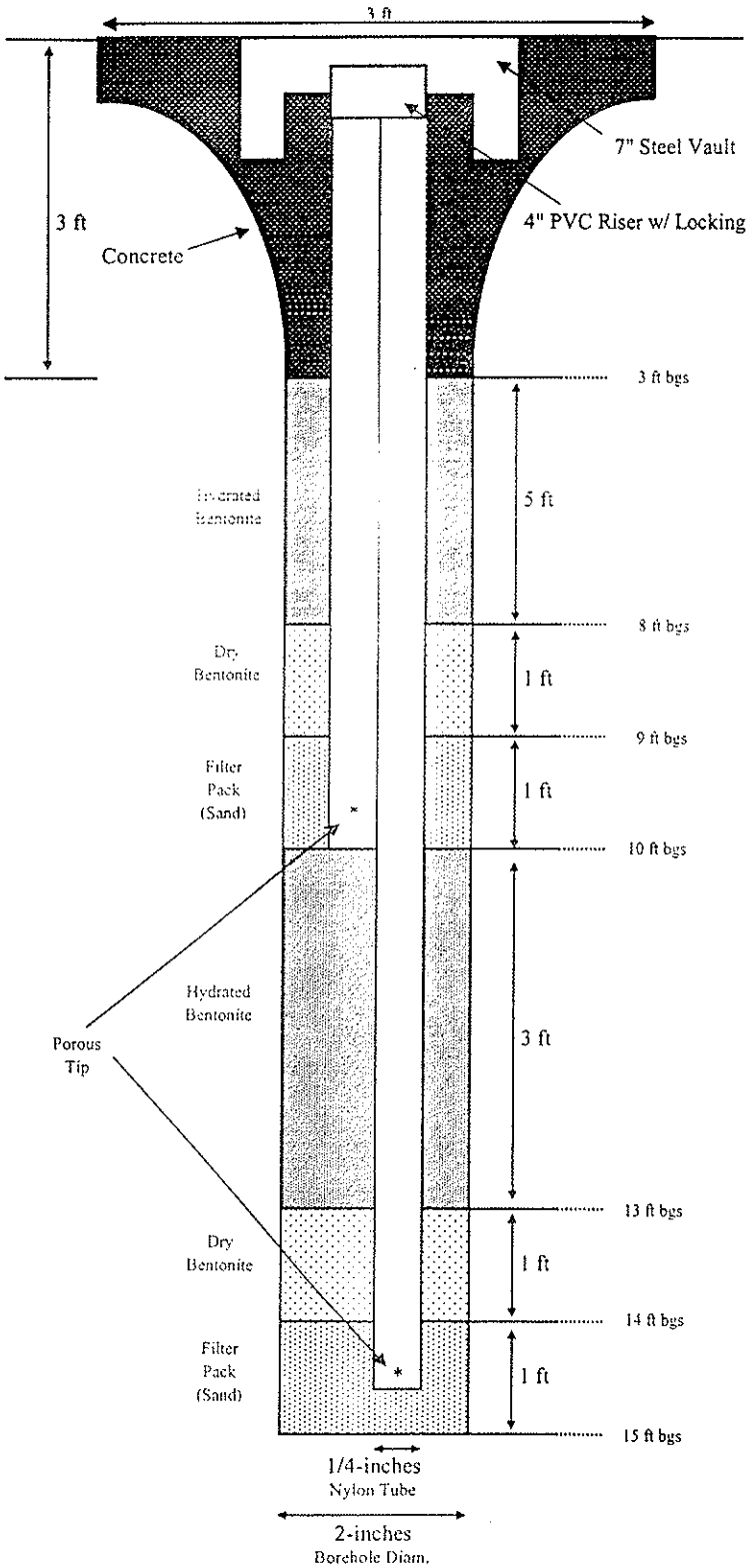
Comments:

Geologist Signature:

GeoSyntec Consultants

Proposed Well Construction

Site:	Poway Landfill	Date:	1/10/06
Well ID:	PVP-3A/3B	Drilling Method:	Direct Push
Drilling Company:	Vironex	Proposed Boring Depth:	15 ft bgs
Drillers:		Proposed Boring Diameter:	2-inches
Geologist:	Chris Gale	Proposed Well Depth:	10-15 ft bgs
		Well Diameter:	2 nested wells, each 1/4 -inches diameter



Proposed Well Construction:

Material: 1/4 " nylon tubing

Inside Diamter:

Proposed Filter Pack:

Type/Brand: Sand

Amount Used:

Placement Method: Tremie

Proposed Seal: &

Type/Brand: Bentonite chips/pellets

Amount Used:

Vol. Fluid Added:

Set-up Time:

Placement Method: Tremmie

Proposed Grout:

Type/Brand: Cement

Amount Used:

Vol. Fluid Added:

Placement Method:

Proposed Well Completion:

Above Grade / Below Grade / **Flush Mounted**

Guard Posts? Y / **N**

Pad Size: 3X3

Cover Type/Size: 7-inch steel Flush Mount

Comments:

Geologist Signature:

PERMIT #LMON103853
A.P.N. #321-200-38-00
EST # H86017

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION

MONITORING WELL AND BORING CONSTRUCTION AND DESTRUCTION PERMIT

SITE NAME: POWAY LANDFILL

SITE ADDRESS: 14900 POWAY RD., POWAY, CA 92064

PERMIT FOR: **VARIANCE TO INSTALL 14 SOIL VAPOR WELLS**

PERMIT APPROVAL DATE: MARCH 17, 2006

PERMIT EXPIRES ON: JULY 15, 2006

RESPONSIBLE PARTY: COUNTY OF SAN DIEGO

PERMIT CONDITIONS:

1. This Variance does not relieve you of your professional obligations to construct the wells in a manner that will prevent the well(s) from being a potential environmental threat to water quality. The above well(s) must be constructed following the procedures for the installation of small diameter wells stated in the SAM Manual, Appendix B, Section IV D (pages 19-36).

2. Wells must have a **minimum 3-foot concrete surface seal**. The surface seal shall consist of concrete able to withstand the maximum anticipated load without cracking or deteriorating. The concrete should meet Class A specifications of a minimum 4000-pound compressive strength.

3. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, E- 4. (http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

4. Within 60 days of completing work, submit a well construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

5. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 338-2339.

APPROVED BY: _____ DATE: 03/17/2006
KEVIN HEATON

NOTIFIED: 3/17/06 BP

DEH:SAM-9075 (1/06)

PERMIT APPLICATION
GROUNDWATER
AND VADOSE MONITORING WELLS
AND EXPLORATORY OR TEST BORINGS

OFFICE USE ONLY
PERMIT LMON # 103853
SAM CASE Y/N # _____
DATE RECEIVED: _____
FEE PAID: _____
CHECK # _____

A. RESPONSIBLE PARTY County of San Diego Phone 858-495-5480
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address 5201 Ruffin Road City San Diego State CA Zip 92123
Contact Person Barry Pulver Phone 858-495-5480 Ext. _____ Fax _____

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # _____

C. CONSULTING FIRM GeoSyntec Consultants
Mailing Address 10875 Rancho Bernardo Rd Ste 200 City San Diego State CA Zip 92127
Registered Professional Veryl Wittig Registration # 7115 (PG)
Contact Person Sean McClain Phone 858-674-6559 Ext. 203 Fax 858-674-6586

D. DRILLING COMPANY Vironex C57# 705927
Contact Name Todd Hanna
Mailing Address 1225 East McFadden Avenue City Santa Ana State CA Zip 92705-
Phone 714-647-6290 Fax 714-647-6291

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	___
☐ Vadose	___
☐ Boring	___
☒ Other	14

Soil Vapor Wells

NUMBER OF WELLS TO BE DESTROYED

☐ ___

MATERIALS TO BE USED

CASING
Not Applicable _____
Type _____
Gauge _____
Diameter _____
Well Screen Size _____
Filter Pack _____

SEAL/BORING BACKFILL
☐ Neat Cement
☒ Cement & Bentonite
☐ Sand-Cement
☐ Bentonite
☐ Other
Borehole diameter _____

Drilling Method
☐ Auger ☐ Air Rotary
☐ Mud Rotary ☒ Other
☐ Percussion Direct Push

PROPOSED CONSTRUCTION
Estimated groundwater depth: _____
Estimated depth of boring _____ ft.

Concrete surface seal	0 to 3
Annular seal	See Attached Diagram to
Bentonite transition seal	_____ to _____
Filter Pack	_____ to _____
Perforation	_____ to _____

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE _____ DATE 1-10-06

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

PG/~~RCE~~ SIGNATURE _____ DATE 3-10-06

SITE INFORMATION

1. **ASSESSOR'S PARCEL NUMBER** 321-200-38
   Site Name Poway Landfill
   Site Address 14900 Poway Road City Poway Zip 92064-

   PROPERTY OWNER County of San Diego
   Phone 858-495-5480 Ext. Fax _____
   Mailing Address 5201 Ruffin Road, Suite D City San Diego State CA
   Zip 92123-

   NUMBER OF WELLS 14 **TYPE OF WELLS** Vapor Wells

2. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ TYPE OF WELLS _____

3. ASSESSOR'S PARCEL NUMBER _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ TYPE OF WELLS _____

4. ASSESSOR'S PARCEL NUMBER _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ TYPE OF WELLS _____

Permit Fees In Effect for July 1, 2005 - June 30, 2006

G. FEES (in effect beginning July 1, 2005, through June 30, 2006)

The County Board of Supervisors authorized a *10% credit, for the Fiscal Year ending June 30, 2006,* to be applied to the Department of Environmental Health customers. This credit is being provided to qualified fee-based programs that have contributed to the cost reduction/cost containment/cost avoidance efforts initiated by the Department. This *fee adjustment, for the Fiscal Year ending June 30, 2006,* Is applicable to fees and permits due and/or obtained during this period. The 10% is <u>not</u> applicable to enforcement fees or fees relating to non-compliance of permit regulations.

ACTIVITY	FEE SCHEDULE FEE -- ONE-TIME FISCAL YEAR 10% CREDIT	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	$185.00 for the first monitoring well $185.00 – 10% <$18.50> =	1 x $166.50 $ 165.00
Permit for Well Maintenance Inspection (Valid for three years)	$100.00 for first well maintenance inspection $100.00 – 10% <$10.00> =	1 x $ 90.00 $ 90.00
Each Additional New Well	$160.00 for each additional well installation $160.00 – 10% <$16.00> = $ 30.00 for each additional well maintenance inspection $ 30.00 – 10% <$ 3.00> =	13 x $144.00 $ 1872.00 13 x $ 27.00 $ 351.00
Permit for Borings Only *(CPT's, Hydropunch, Geoprobes,* Temporary Well Points, etc.)	$185.00 for the first boring $185.00 – 10% <$18.50> = $ 50.00 for each additional boring $ 50.00 – 10% <$ 5.00> =	1 x $166.50 $_____ _____ x $ 45.00 $_____
Permit for Well Destructions Only	$185.00 for the first destruction $185.00 – 10% <$18.50> = $120.00 for each additional destruction $120.00 – 10% <$12.00> =	1 x $166.50 $_____ _____ x $108.00 $_____
Permit for any Combination of Well Installations, Borings, & Destructions *(except UST backfill permit)* Permit for any Combination of Well Installations, Borings, & Destructions *(except UST backfill permit)*	The first activity will be $185.00. $185.00 – 10% <$18.50> = Additional activities will be as follows: $160.00 for each additional well $160.00 – 10% <$16.00> = $100.00 for first well maintenance inspection $100.00 – 10% <$10.00> = $ 30.00 for each additional well maintenance inspection $ 30.00 – 10% <$ 3.00> = $ 50.00 for each additional boring $ 50.00 – 10% <$ 5.00> = $120.00 for each well destruction $120.00 – 10% <$12.00> =	1 x $166.50 $_____ _____ x $144.00 $_____ 1 x $ 90.00$_____ _____ x $ 27.00 $_____ _____ x $ 45.00 $_____ _____ x $108.00 $_____
	TOTAL COST OF PERMIT	$ 2,478.00
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	(Flat Fee) $320.00 – 10% <$32.00> =	$288.00

I. **QUESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.**

1. If wells are to be destroyed, provide a description of method of destruction NA

2. What is the purpose of the well/boring investigation?

   ☒ a. Part of an ongoing site assessment case in which DEH or another government regulator is the lead agency.

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☐ c. Geotechnical investigation for proposed construction, land stabilization or:

   ☐ d. Other: _____

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? The vapor wells will be installed imediately after the borings are completed

4. What field procedures will be utilized to determine if contamination exists? The cuttings will be screened with a photoionization detector (PID) and a composite sample from the cuttings will be submitted to an analytical laboratory for analysis

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? Soil Vapor samples will be submitted to an analytical laboratory

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? VOCs EPA Method TO-15 and Fixed Gases

7. How will samples be transported and preserved? Soil Vapor samples will be Fed-Ex to lab (No perservative).

8. What sampling methods will be used? Soil cuttings will be stored in 55-gallon drums and one composite soil sample will be collected from all drums.

9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www/sdcounty.ca.gov/deh/lwq/sam/monitoring_well.html). :yes, see attached diagram per discussion with Kevin Heaton

10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. No

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination? Drilling equipment will be steamed cleaned prior to drilling onsite

12. What methods will be used to clean sampling equipment? New sampling tubbing will be used at each vapor well location

13. What cleaning method will be used to clean casing and screen prior to installation? New tubing will be used which will arrive onsite pre-wrapped

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2315/1-800-253-9933
www.sdcounty.ca.gov/deh/lwq

RICHARD HAAS
ASSISTANT DIRECTOR

PROPERTY OWNER RESPONSIBILITY ACKNOWLEDGEMENT

Proposed locations for subsurface work:

Property Address: 14900 Poway Road, Poway,Ca,92064

Assessor's Parcel Number (APN): 321-200-38

I, Barry Pulver, owner of the property/properties listed above, give my permission to

GeoSyntec Consultants (consulting company, contractor) to conduct the following work at the locations stated above.

☒ Install 14 monitoring wells ☐ Destroy _____ monitoring wells ☐ Drill _____ soil borings

The person who causes to have a monitoring well installed or an existing well destroyed on this property is defined as the *Responsible Party*. San Diego County Code, Section 67.424, states that: "Monitoring wells shall be maintained to meet construction or destruction standards. If a monitoring well does not meet construction or destruction standards, the *Responsible Party* must repair, reconstruct or destroy the monitoring well so it meets the standards. The property owner, if different than the *Responsible Party*, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the *Responsible Party* does not complete the necessary actions."

A soil boring is used specifically to sample soil and, because there are construction and destruction standards, is included in the definition of a monitoring well even though no maintenance is required. These standards are outlined in the County of San Diego Site Assessment and Mitigation (SAM) Manual and the State of California Well Standards Bulletin 74-90.

I understand that Veryl Wittig (registered professional) of #7115 (consulting company) and an authorized signer for Vironex (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

I also understand that if either the registered professional and/or the licensed drilling company should fail in their responsibilities as defined in San Diego County Code, Section 67.424, I, as the property owner, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the Responsible Party does not complete the necessary actions.

The scope of work covered by this Acknowledgement will expire one year from the date of the property owner's signature below. If an extension of time beyond one year is required to complete the proposed drilling activities or additional work is proposed, a new Property Owner Responsibility Agreement will be required.

Property Owner Signature: _____ Date: 3/10/06

Print Name: Barry Pulver Title: Hydrogeologist

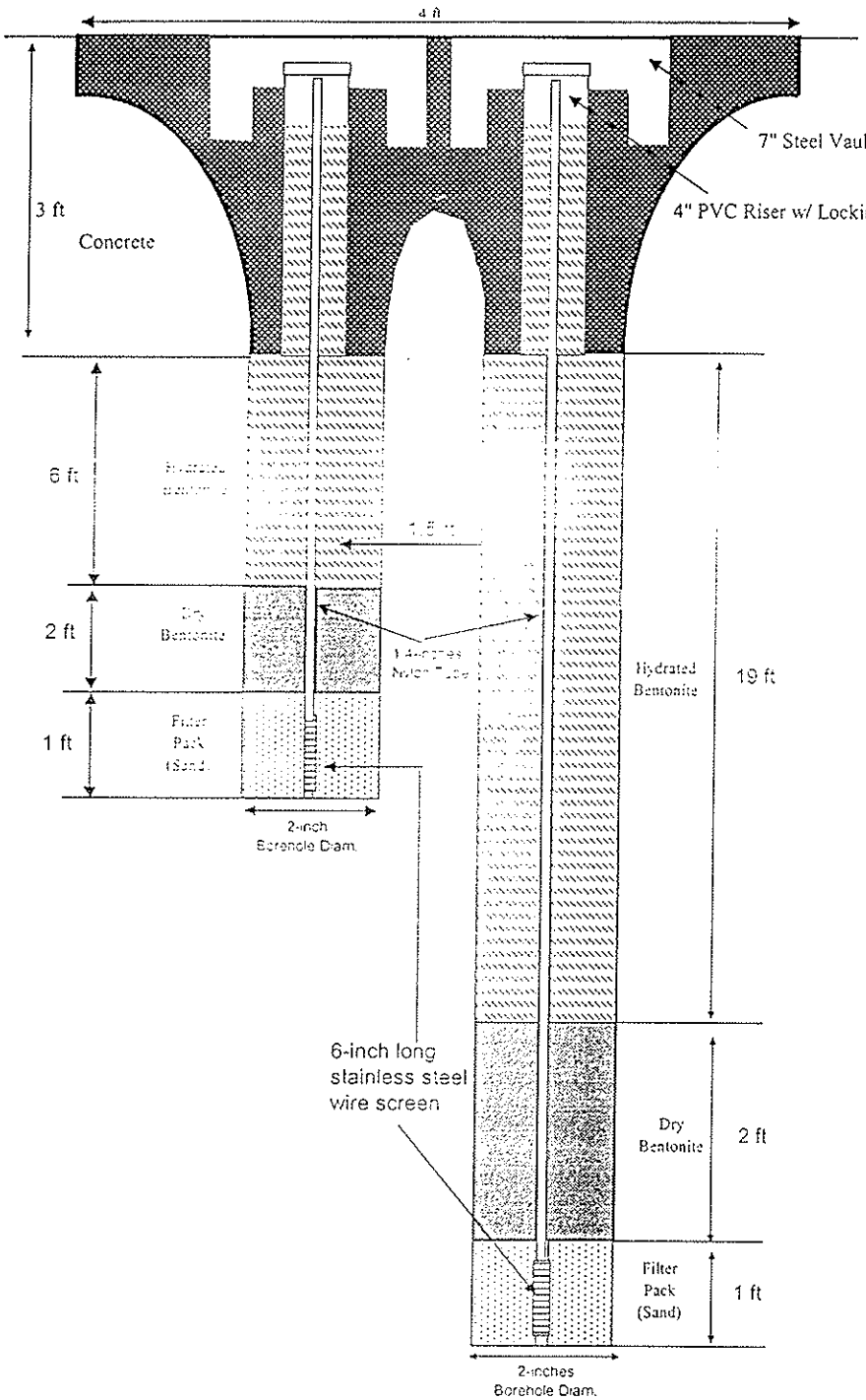
Company: County of San Diego

Mailing Address: 5201 Ruffin Rd MS 0383 San Diego, CA 92123

GeoSyntec Consultants

Proposed Well Construction

Site:	Poway Landfill	Date:	3/10/06
Well ID:	PVP-4A/4B through PVP-9A/9B	Drilling Method:	Direct Push
Drilling Company:	Vironex	Proposed Boring Depth:	12-25 feet bgs
Drillers:		Proposed Boring Diam:	2-inches
Geologist:	Sean McClain	Proposed Well Depth:	12-25 feet bgs
		Well Diameter:	2 Vapor well cluster, each
			1/4 -inches diameter



Proposed Well Construction:

Material: 1/4 " nylon tubing

Inside Diamter:

Proposed Filter Pack:

Type/Brand: Sand

Amount Used: 6" above & 6" below

Placement Method: Tremie

Proposed Seal: &

Type/Brand: Granular Bentonite

Amount Used: 2' dry; 6-19' hydrated above

Vol. Fluid Added:

Set-up Time:

Placement Method: Trammie

Proposed Grout:

Type/Brand: Concrete

Amount Used:

Vol. Fluid Added:

Placement Method:

Proposed Well Completion:

Above Grade / Below Grade / Flush Mounted

Guard Posts? Y / N

Pad Size: 4X3

Cover Type/Size: 7-inch steel Flush Mount

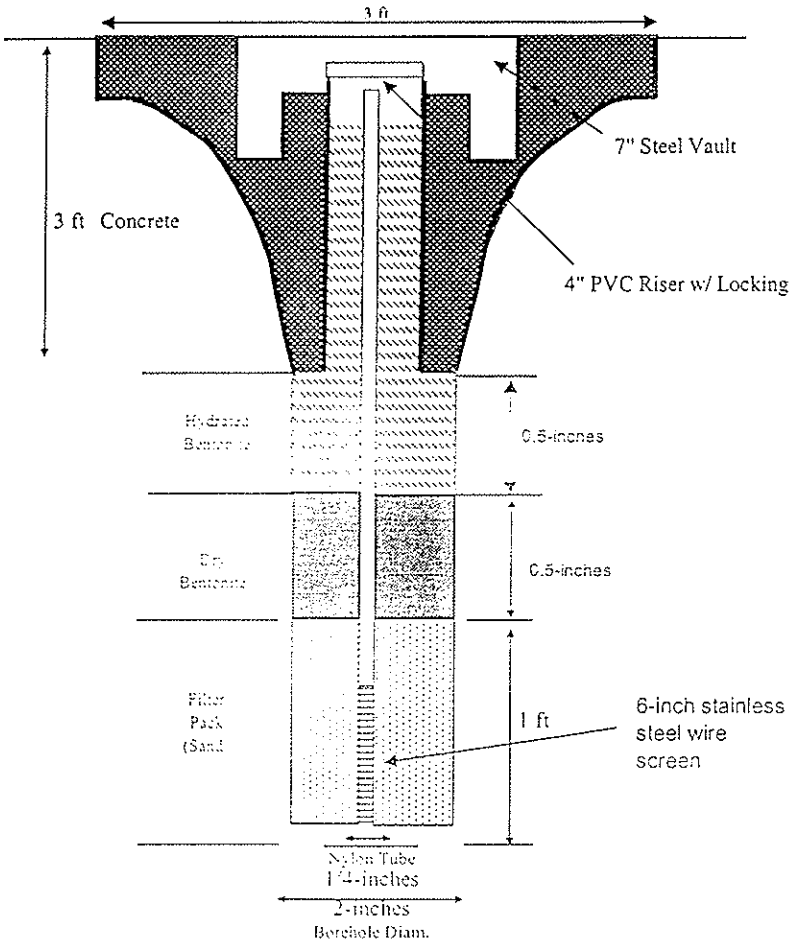
Comments:

Geologist Signature:

GeoSyntec Consultants

Proposed Well Construction

Site:	Poway Landfill	Date:	3/10/06
Well ID:	PVP-10 and PVP-11	Drilling Method:	Direct Push
Drilling Company:	Vironex	Proposed Boring Depth:	5 feet bgs
Drillers:		Proposed Boring Diameter:	2-inches
Geologist:	Sean McClain	Proposed Well Depth:	5 feet bgs
		Well Diameter:	1/4 -inches diameter



Proposed Well Construction:

Material:	1/4 " nylon tubing
Inside Diamter:	
Proposed Filter Pack:	
Type Brand:	Sand
Amount Used:	1 ft
Placement Method:	Tremie
Proposed Seal:	
Type/Brand:	Granualar Bentonite
Amount Used:	0.5" dry and 0.5" hydrated
Vol. Fluid Added:	
Set-up Time:	
Placement Method:	Tremmie
Proposed Grout:	
Type/Brand:	Concrete
Amount Used:	
Vol. Fluid Added:	
Placement Method:	

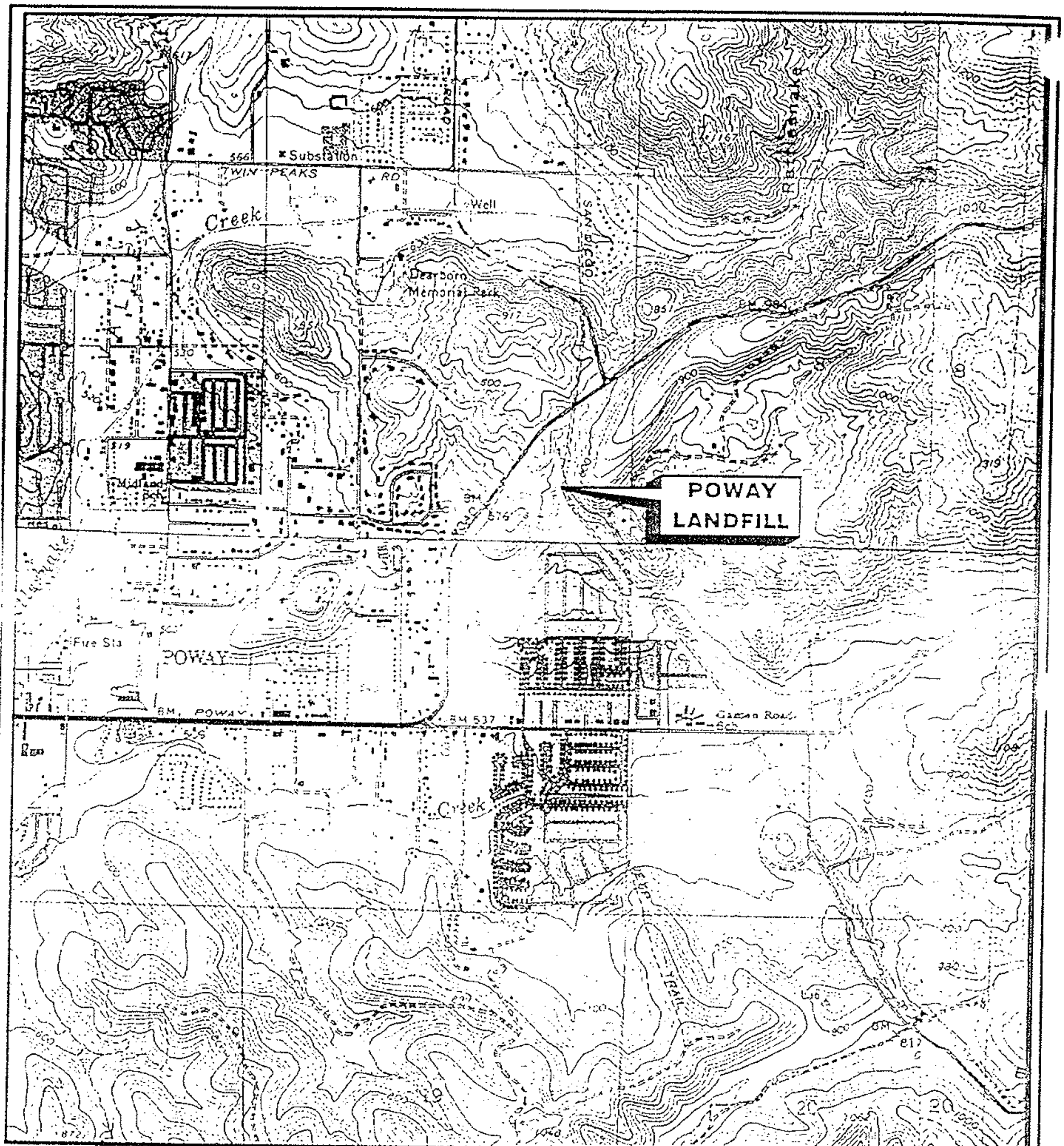
Proposed Well Completion:

Above Grade / Below Grade / Flush Mounted

Guard Posts? Y / N

Pad Size:	3X3
Cover Type/Size:	7-inch steel Flush Mount
Comments:	

Geologist Signature:



SOURCE:
NATIONAL GEOGRAPHIC (CALIFORNIA)
SEAMLESS USGS TOPOGRAPHIC MAPS ON CD-ROM
POWERED BY TOPO

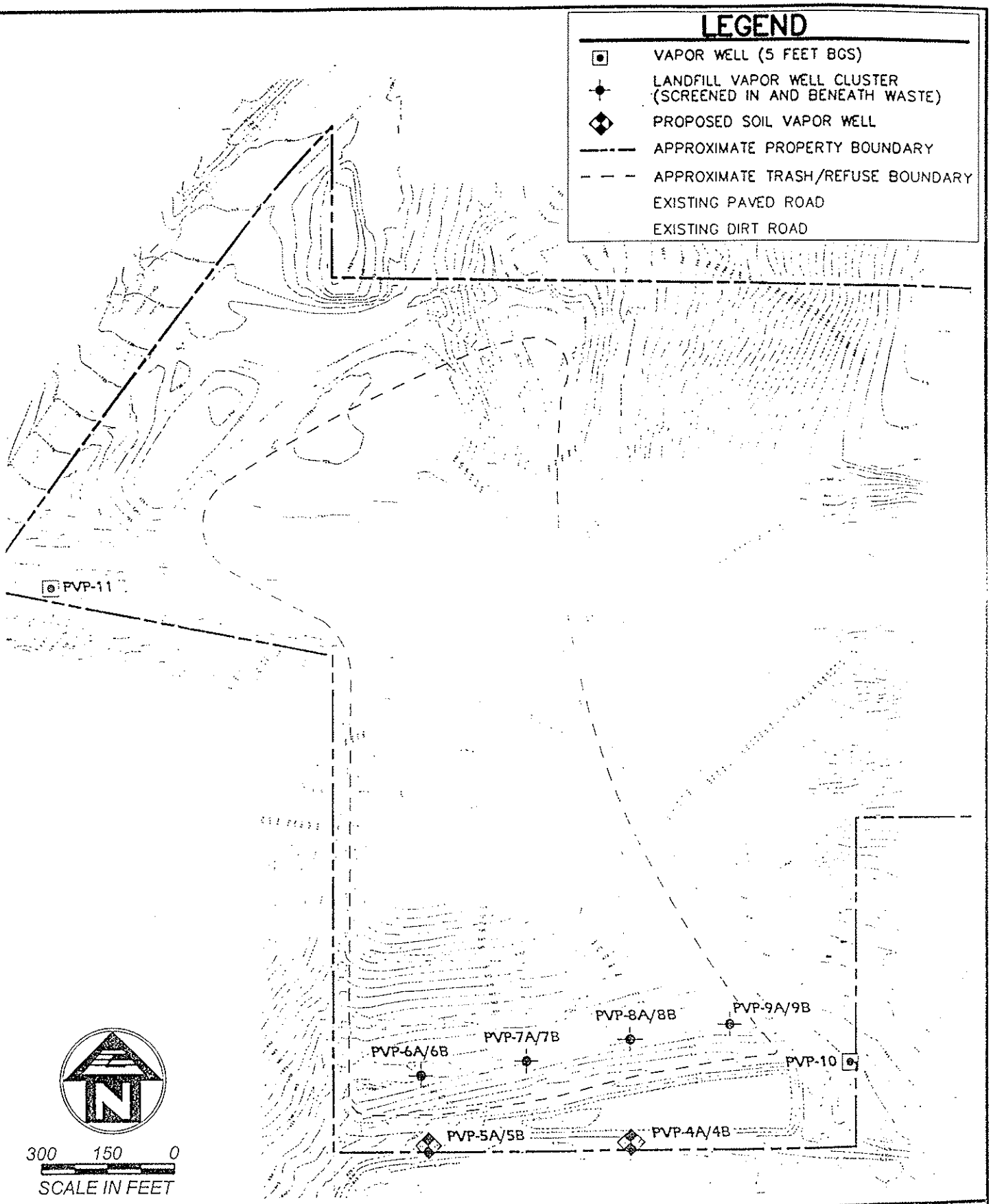
N

2,000 1,000 0 2,000 4,000

SCALE IN FEET

GEOSYNTEC CONSULTANTS

SITE LOCATION POWAY LANDFILL POWAY, CALIFORNIA	FIGURE NO. 1 PROJECT NO. SC0233 DATE: DECEMBER 2005



P:\PRJ\SDCadd\CADD\SC0233\06-06-FIGURES\06-06-VAPOR\SC0233-06-06-PP_vapor-ONSITE.dwg 3/10/06 16:09 Administrator

GeoSyntec Consultants

BASE MAP REFERENCE:
Stewart Geo Technologies
July 2002

PROPOSED SOIL VAPOR WELLS
POWAY LANDFILL
POWAY, CALIFORNIA

FIGURE NO. 2
PROJECT NO. SC0233-06-06
DATE: MARCH 2006

PERMIT #LMON103898
A.P.N. #321-200-38, 323-461-25-00
EST # H86017

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM

MONITORING WELL AND BORING CONSTRUCTION AND DESTRUCTION PERMIT

SITE NAME: POWAY LANDFILL

SITE ADDRESS: 14900 POWAY RD. & SUNSET VIEW RD., POWAY CA 92064

PERMIT FOR: **INSTALL 3 GROUNDWATER MONITORING WELLS**

PERMIT APPROVAL DATE: APRIL 5, 2006

PERMIT EXPIRES ON: AUGUST 3, 2006

RESPONSIBLE PARTY: COUNTY OF SAN DIEGO, LANDFILL MANAGEMENT

PERMIT CONDITIONS:

1. Wells must have a **minimum 3-foot concrete surface seal**. The surface seal shall consist of concrete able to withstand the maximum anticipated load without cracking or deteriorating. The concrete should meet Class A specifications of a minimum 4000-pound compressive strength.

2. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E- 4. (http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

3. Within 60 days of completing work, submit a well construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

4. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 338-2339.

APPROVED BY: _____ DATE: 04/05/2006
KEVIN HEATON

NOTIFIED: 04/20/06 v.message

DEH:SAM-9075 (3/05)

COUNTY OF SAN DIEGO

DEPARTMENT OF ENVIRONMENTAL HEALTH
1255 Imperial Avenue, 3rd Floor
San Diego, CA 92101
(619)338-2228

RECEIPT NUMBER: 06-0322662
Cashier: EGA A

APN: 321-200-38-00
DATE ISSUED: 04-APR-2006
PERMIT: LMON T103898
SCOPE: MONITORING WELL/CATHODIC WELL
SITE ADDRESS: NO ADDRESS
SUBDIVISION:
CITY:

PARCEL OWNER: COUNTY OF SAN DIEGO
ADDRESS: PUBLIC AGENCY
CITY/STATE/ZIP:, 00000

PERMIT OWNER:
ADDRESS:
CITY/STATE/ZIP:

Fees Calculated 12 Months Back

Date	Fee Code	Description	Paid to Date	This Receipt	Balance Due
03-APR-2006	6LW25--EHO	MONITORING WELL	$185.00	$0.00	$0.00
03-APR-2006	6LW25-ZCRO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	-$18.50	$0.00	$0.00
03-APR-2006	6LWMAINEHO	WELL MAINTENANCE FEE	$100.00	$0.00	$0.00
03-APR-2006	6LWMAINZCO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	-$10.00	$0.00	$0.00
03-APR-2006	6LWAM--EHO	ADDITIONAL MONITORING WELL	$319.00	$1.00	$0.00
03-APR-2006	6LWAM-ZCRO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	-$32.00	$0.00	$0.00
03-APR-2006	6LWMAIXEHO	ADDITIONAL WELL MAINTENANCE FEE	$60.00	$0.00	$0.00
03-APR-2006	6LWMAIXZCO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	-$6.00	$0.00	$0.00
		Totals:		$1.00	$0.00

Payment Code	Description	Amount
CASH	CASH PAYMENT	$1.00

Tendered:	$1.00
Change:	$0.00
Balance Due:	$0.00

COUNTY OF SAN DIEGO

DEPARTMENT OF ENVIRONMENTAL HEALTH
1255 Imperial Avenue, 3rd Floor
San Diego, CA 92101
(619)338-2228

RECEIPT NUMBER: 06-0322661
Cashier: EGARCIA

APN: 321-200-38-00
DATE ISSUED: 04-APR-2006
PERMIT: LMON T103898
SCOPE: MONITORING WELL/CATHODIC WELL
SITE ADDRESS: NO ADDRESS
SUBDIVISION:
CITY:

PARCEL OWNER: COUNTY OF SAN DIEGO
ADDRESS: PUBLIC AGENCY
CITY/STATE/ZIP: , 00000

PERMIT OWNER:
ADDRESS:
CITY/STATE/ZIP:

Fees Calculated 12 Months Back

Date	Fee Code	Description	Paid to Date	This Receipt	Balance Due
03-APR-2006	6LW25--EHO	MONITORING WELL	$0.00	$185.00	$0.00
3-APR-2006	6LW25-ZCRO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	$0.00	-$18.50	$0.00
3-APR-2006	6LWMAINEHO	WELL MAINTENANCE FEE	$0.00	$100.00	$0.00
3-APR-2006	6LWMAINZCO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	$0.00	-$10.00	$0.00
3-APR-2006	6LWAM--EHO	ADDITIONAL MONITORING WELL	$0.00	$319.00	$1.00
3-APR-2006	6LWAM-ZCRO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	$0.00	-$32.00	$0.00
3-APR-2006	6LWMAIXEHO	ADDITIONAL WELL MAINTENANCE FEE	$0.00	$60.00	$0.00
3-APR-2006	6LWMAIXZCO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	$0.00	-$6.00	$0.00
		Totals:		$597.50	$1.00

Payment Code	Description	Amount
CHK	1063	$597.50

Tendered:	$597.50
Change:	$0.00
Balance Due:	$1.00

PERMIT APPLICATION
GROUNDWATER
AND VADOSE MONITORING WELLS
AND EXPLORATORY OR TEST BORINGS

RECEIVED
2006 MAR 30 PM 1 40
D. E. H.

OFFICE USE ONLY
PERMIT LMON # 103898
SAM CASE Y/N # _____
DATE RECEIVED: _____
FEE PAID: _____
CHECK # _____

A. RESPONSIBLE PARTY County of San Diego, Land Use Management Phone 858-495-5480
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address 5201 Ruffin Rd Ste. D City San Diego State CA Zip 92123
Contact Person Barry Pulver Phone 858-495-5480 Ext. _____ Fax _____

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # _____

C. CONSULTING FIRM GeoSynTec Consultants
Mailing Address 10875 Rancho Bernardo Rd ste 200 City San Diego State CA Zip 92127
Registered Professional Sam Williams Registration # 4858 (PG)
Contact Person Sean McClain Phone 858-674-6559 Ext. 811 Fax 858-674-6586

D. DRILLING COMPANY TRI-COUNTY DRILLING, INC. C57# 547737
Contact Name Tim Duddie
Mailing Address 9631 Candida Street City San Diego State CA Zip 92126-
Phone 858-271-0099 Fax 858-271-0233

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☒ Groundwater	3
☐ Vadose	___
☐ Boring	___
☐ Other	___

NUMBER OF WELLS TO BE DESTROYED

☐	___

MATERIALS TO BE USED

CASING
Not Applicable _____
Type PVC
Gauge SCH 40
Diameter 2-inch
Well Screen Size 0.02
Filter Pack #3

SEAL/BORING BACKFILL
☐ Neat Cement
☒ Cement & Bentonite
☐ Sand-Cement
☐ Bentonite
☐ Other

Borehole diameter 6-inch

Drilling Method
☐ Auger ☒ Air Rotary
☐ Mud Rotary ☐ Other
☐ Percussion

PROPOSED CONSTRUCTION
Estimated groundwater depth: _____
Estimated depth of boring _____ ft.

Concrete surface seal	0 to 3
Annular seal	See Diagram
Bentonite transition seal	_____ to _____
Filter Pack	_____ to _____
Perforation	_____ to _____

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE [signature] DATE 3-27-06

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

PG/RCE SIGNATURE [signature] DATE 3.29.06

Permit Fees In Effect for July 1, 2005 - June 30, 2006

G. FEES (in effect beginning July 1, 2005, through June 30, 2006)

The County Board of Supervisors authorized a *10% credit, for the Fiscal Year ending June 30, 2006,* to be applied to the Department of Environmental Health customers. This credit is being provided to qualified fee-based programs that have contributed to the cost reduction/cost containment/cost avoidance efforts initiated by the Department. This *fee adjustment, for the Fiscal Year ending June 30, 2006,* is applicable to fees and permits due and/or obtained during this period. The 10% is not applicable to enforcement fees or fees relating to non-compliance of permit regulations.

ACTIVITY	FEE SCHEDULE FEE -- ONE-TIME FISCAL YEAR 10% CREDIT	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	$185.00 for the first monitoring well $185.00 – 10% <$18.50> =	1 x $166.50 $ 165.50
Permit for Well Maintenance Inspection (Valid for three years)	$100.00 for first well maintenance inspection $100.00 – 10% <$10.00> =	1 x $ 90.00 $ 90.00
Each Additional New Well	$160.00 for each additional well installation $160.00 – 10% <$16.00> = $ 30.00 for each additional well maintenance inspection $ 30.00 – 10% <$ 3.00> =	2 x $144.00 $ 288.00 2 x $ 27.00 $ 54.00
Permit for Borings Only *(CPT's, Hydropunch, Geoprobes,* Temporary Well Points, etc.)	$185.00 for the first boring $185.00 – 10% <$18.50> = $ 50.00 for each additional boring $ 50.00 – 10% <$ 5.00> =	1 x $166.50 $_____ _____ x $ 45.00 $_____
Permit for Well Destructions Only	$185.00 for the first destruction $185.00 – 10% <$18.50> = $120.00 for each additional destruction $120.00 – 10% <$12.00> =	1 x $166.50 $_____ _____ x $108.00 $_____
Permit for any Combination of Well Installations, Borings, & Destructions *(except UST backfill permit)* Permit for any Combination of Well Installations, Borings, & Destructions *(except UST backfill permit)*	The first activity will be $185.00. $185.00 – 10% <$18.50> = Additional activities will be as follows: $160.00 for each additional well $160.00 – 10% <$16.00> = $100.00 for first well maintenance inspection $100.00 – 10% <$10.00> = $ 30.00 for each additional well maintenance inspection $ 30.00 – 10% <$ 3.00> = $ 50.00 for each additional boring $ 50.00 – 10% <$ 5.00> = $120.00 for each well destruction $120.00 – 10% <$12.00> =	1 x $166.50 $_____ _____ x $144.00 $_____ 1 x $ 90.00$_____ _____ x $ 27.00 $_____ _____ x $ 45.00 $_____ _____ x $108.00 $_____
	TOTAL COST OF PERMIT	$ 597.50
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	(Flat Fee) $320.00 – 10% <$32.00> =	$288.00

F. SITE INFORMATION

1. **ASSESSOR'S PARCEL NUMBER** 321-200-38 and 323-461-25
Site Name Poway Landfill
Site Address 14900 Poway Road City Poway Zip 92064-

PROPERTY OWNER County of San Diego
Phone 858-495-5480 Ext. Fax _____
Mailing Address 5201 Ruffin Road, Suite D City San Diego State CA
Zip 92123-

NUMBER OF WELLS 12 **TYPE OF WELLS** Vapor Wells

2. **ASSESSOR'S PARCEL NUMBER** _____
Site Name _____
Site Address _____ City _____ Zip _____

PROPERTY OWNER _____
Phone _____ Ext. _____ Fax _____
Mailing Address _____ City _____ State __ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

3. **ASSESSOR'S PARCEL NUMBER** _____
Site Name _____
Site Address _____ City _____ Zip _____

PROPERTY OWNER _____
Phone _____ Ext. _____ Fax _____
Mailing Address _____ City _____ State __ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

4. **ASSESSOR'S PARCEL NUMBER** _____
Site Name _____
Site Address _____ City _____ Zip _____

PROPERTY OWNER _____
Phone _____ Ext. _____ Fax _____
Mailing Address _____ City _____ State __ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

H. QUESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.

1. If wells are to be destroyed, provide a description of method of destruction NA

2. What is the purpose of the well/boring investigation?

   ☒ a. Part of an ongoing site assessment case in which DEH or another government regulator is the lead agency.

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☐ c. Geotechnical investigation for proposed construction, land stabilization or:

   ☐ d. Other: _____

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? The monitor wells will be installed imediately after the borings are completed

4. What field procedures will be utilized to determine if contamination exists? The cuttings will be screened with a photoionization detector (PID) and a composite sample from the cuttings will be submitted to an analytical laboratory for analysis

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? Groundwater samples will be submitted to an analytical laboratory

6. What constituents will be monitored and tested (include EPA Laboratory Test Methods to be used)? VOCs by EPA Method 8260B, General Chemistry and Metals by EPA Method 6010

7. How will samples be transported and preserved? Groundwater samples will be sent to lab by curier (with ice perservative).

8. What sampling methods will be used? Soil cuttings will be stored in 55-gallon drums and one composite soil sample will be collected from all drums.

9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www/sdcounty.ca.gov/deh/lwq/sam/monitoring_well.html). :Yes, The borehole will be reduced from 8" to 4". The 2" well screen and filter pack will be constructed in the 4" borehole, the seal will be constructed in the 8" borehole (See well diagrams).

10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. No

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination? Drilling equipment will be steamed cleaned prior to drilling onsite

12. What methods will be used to clean sampling equipment? Sampling equipment will be cleaned by three bucket wash method.

13. What cleaning method will be used to clean casing and screen prior to installation? New PVC pipe will be used which will arrive onsite pre-wrapped

GeoSyntec Consultants

Well Construction Log

Site: Poway Landfill

Well ID: POGW-21

Drilling Company: Tri-County Drilling

Drillers:

Geologist: Sean McClain

Date: 4/3/2006

Drilling Method: Hollow Stem Auger/Rock Coring

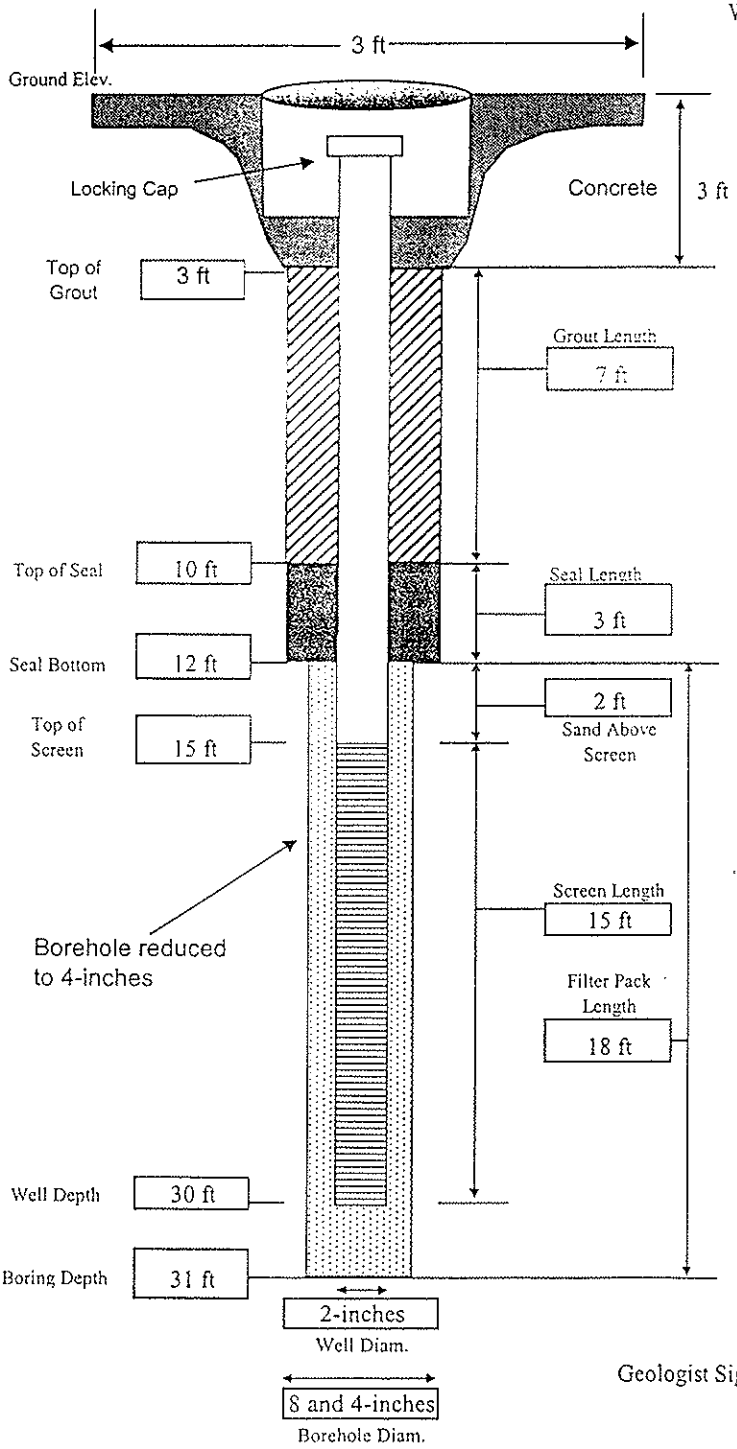
Boring Depth: 31 feet

Boring Diameter: 6-inches

Well Depth: 30 feet

3 ft above ground surface

Well Diameter: 2-inches



Well Construction:

Material: Schedule 40 PVC

Inside Diamter: 2-inches

Screen Slot Size: 0.02-inches

Screen Beg.: 15 feet End: 30 feet

Sump Y / N

Type/Lenth: NA

Filter Pack:

Type/Brand: Montery Sand #3

Amount Used:

Placement Method: Direct Pour

Seal:

Type/Brand: Enviroplug WYO-Ben

Amount Used:

Vol. Fluid Added:

Set-up Time:

Placement Method: Direct pour

Grout:

Type/Brand: Grout well WYO-Ben

Amount Used:

Vol. Fluid Added:

Placement Method: Tremmie

Well Completion:

Above Grade / **Below Grade**

Guard Posts? Y / N

Pad Size: 3-foot diameter

Cover Type/Size: 12-inch steel cover

Comments:

Geologist Signature:

GeoSyntec Consultants

Well Construction Log

Site: Poway Landfill

Well ID: POGW-20

Drilling Company: Tri-County Drilling

Drillers:

Geologist: Sean McClain

Date: 4/3/2006

Drilling Method: Hollow Stem Auger/Rock Coring

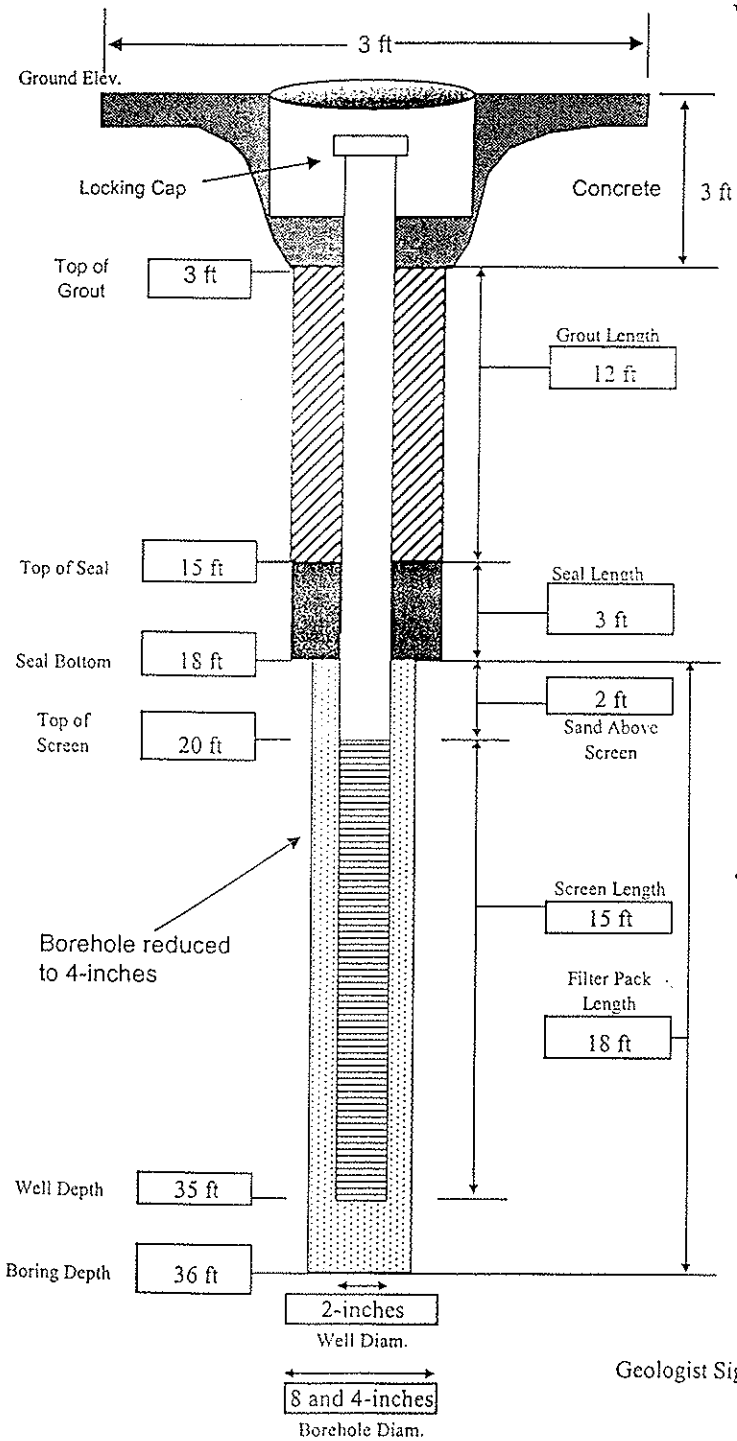
Boring Depth: 36 feet

Boring Diameter: 6-inches

Well Depth: 35 feet

3 ft above ground surface

Well Diameter: 2-inches



Well Construction:

Material: Schedule 40 PVC

Inside Diamter: 2-inches

Screen Slot Size: 0.02-inches

Screen Beg.: 20 feet End: 35 feet

Sump Y / N

Type/Lenth: NA

Filter Pack:

Type/Brand: Montery Sand #3

Amount Used:

Placement Method: Direct Pour

Seal:

Type/Brand: Enviroplug WYO-Ben

Amount Used:

Vol. Fluid Added:

Set-up Time:

Placement Method: Direct pour

Grout:

Type/Brand: Grout well WYO-Ben

Amount Used:

Vol. Fluid Added:

Placement Method: Tremmie

Well Completion:

Above Grade / **Below Grade**

Guard Posts? Y / N

Pad Size: 3-foot diameter

Cover Type/Size: 12-inch steel cover

Comments:

Geologist Signature:

H. **QUESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.**

1. If wells are to be destroyed, provide a description of method of destruction NA

2. What is the purpose of the well/boring investigation?

   ☒ a. Part of an ongoing site assessment case in which DEH or another government regulator is the lead agency.

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☐ c. Geotechnical investigation for proposed construction, land stabilization or:

   ☐ d. Other: _____

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? The monitor wells will be installed imediately after the borings are completed

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7. How will samples be transported and preserved? Groundwater samples will be sent to lab by curier (with ice perservative).

8. What sampling methods will be used? Soil cuttings will be stored in 55-gallon drums and one composite soil sample will be collected from all drums.

9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www/sdcounty.ca.gov/deh/lwq/sam/monitoring_well.html). :No

10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. No

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination? Drilling equipment will be steamed cleaned prior to drilling onsite

12. What methods will be used to clean sampling equipment? Sampling equipment will be cleaned by three bucket wash method.

13. What cleaning method will be used to clean casing and screen prior to installation? New PVC pipe will be used which will arrive onsite pre-wrapped

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2315/1-800-253-9933
www.sdcounty.ca.gov/deh/lwq

RICHARD HAAS
ASSISTANT DIRECTOR

PROPERTY OWNER RESPONSIBILITY ACKNOWLEDGEMENT

Proposed locations for subsurface work:

Property Address: 14900 Pomerado Rd, Poway, CA

Assessor's Parcel Number (APN): 321-300-38

I, Barry Pulver, owner of the property/properties listed above, give my permission to Geo Sentry Consultants (consulting company, contractor) to conduct the following work at the locations stated above.

☒ Install 2 monitoring wells ☐ Destroy _____ monitoring wells ☐ Drill _____ soil borings

The person who causes to have a monitoring well installed or an existing well destroyed on this property is defined as the *Responsible Party*. San Diego County Code, Section 67.424, states that: "Monitoring wells shall be maintained to meet construction or destruction standards. If a monitoring well does not meet construction or destruction standards, the *Responsible Party* must repair, reconstruct or destroy the monitoring well so it meets the standards. The property owner, if different than the *Responsible Party*, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the *Responsible Party* does not complete the necessary actions."

A soil boring is used specifically to sample soil and, because there are construction and destruction standards, is included in the definition of a monitoring well even though no maintenance is required. These standards are outlined in the County of San Diego Site Assessment and Mitigation (SAM) Manual and the State of California Well Standards Bulletin 74-90.

I understand that Sam Williams (registered professional) of Geo Sentry Consultants (consulting company) and an authorized signer for Tri-County Drilling (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

I also understand that if either the registered professional and/or the licensed drilling company should fail in their responsibilities as defined in San Diego County Code, Section 67.424, I, as the property owner, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the Responsible Party does not complete the necessary actions.

The scope of work covered by this Acknowledgement will expire one year from the date of the property owner's signature below. If an extension of time beyond one year is required to complete the proposed drilling activities or additional work is proposed, a new Property Owner Responsibility Agreement will be required.

Property Owner Signature: _____ Date: 3/29/06

Print Name: Barry Pulver Title: _____

Company: _____

Mailing Address: _____

ROW NO. 06-09

CITY OF POWAY

CITY OF POWAY · THE CITY IN THE COUNTRY

PUBLIC RIGHT-OF-WAY PERMIT

Associated Plan No. See Attached Location Map
Contact Person Sean McClain
Address 11305 Rancho Bernardo Rd 101
San Diego, CA
Phone No. (858) 674-6559

APPLICANT PLEASE FILL OUT NUMBERED ITEMS 1-4:

1. APPLICANT, GeoSyntec Consultants, hereby requests permission to work in the following streets or other public easements (provide owner, address, and property description): Property adjacent to Southwest corner of Poway Landfill (Parcel No. 323-461-25)
2. TO INSTALL (provide type of installation and approximate dimensions, length, width, and depth): One groundwater monitor well: 6" casing to approximately 75' Depth with monument finish, according to San Diego Site Assessment & Mitigation Guidelines.
3. X PRIVATE DEVELOPMENT ___SOUTH POWAY ___CITY PROJECT
4. Contractor Tri-County Drilling Subcontractors None

   Job superintendent Dave Maske License No. 547737

   Address 9631 Candida Street, San Diego, CA 92126

   Contractor's License No. ________ Type of License C57

APPLICANT MUST SUBMIT THE FOLLOWING WITH THE APPLICATION:

1. Copy of the Contractor's license (Type A required).
2. Certificate of insurance for worker's compensation and general liability in the amount of $1 million naming the City as an additional insured.
3. Detailed and scaled traffic control plan for all phases of work.
4. Detailed construction schedule and clear description of work.
5. Itemized cost estimate (unless fees were previously paid with an approved plan listed above).
6. All applicable fees and deposits.

PRE-APPROVED
NOT FOR CONSTRUCTION
PENDING PRE-CONSTRUCTION MEETING

NOTE: Application will not be accepted unless items 1-6 are provided. In some cases, the City will consider a waiver of a part of the requirements of items 1-3 with submittal of a waiver request.

Hours of work 8:30 am - 3:30 pm (8:30 a.m. and 3:30 p.m. unless otherwise specified).

ACCESS TO SITE IS TO BE VIA ROUTE 2 ONLY. KK

Contractor must call Underground Service Alert at 1-800-422-4133 to have utilities marked out before the preconstruction meeting. After approval of permit, the City Inspector will contact the contractor and set up a time for a pre-construction meeting. City inspector must have a minimum of 48-hours notification prior to scheduling of pre-construction meeting and construction. Location of all utility cabinets or structures are subject to review, and may require an MDRA to be processed through Development Services Department, Planning division.

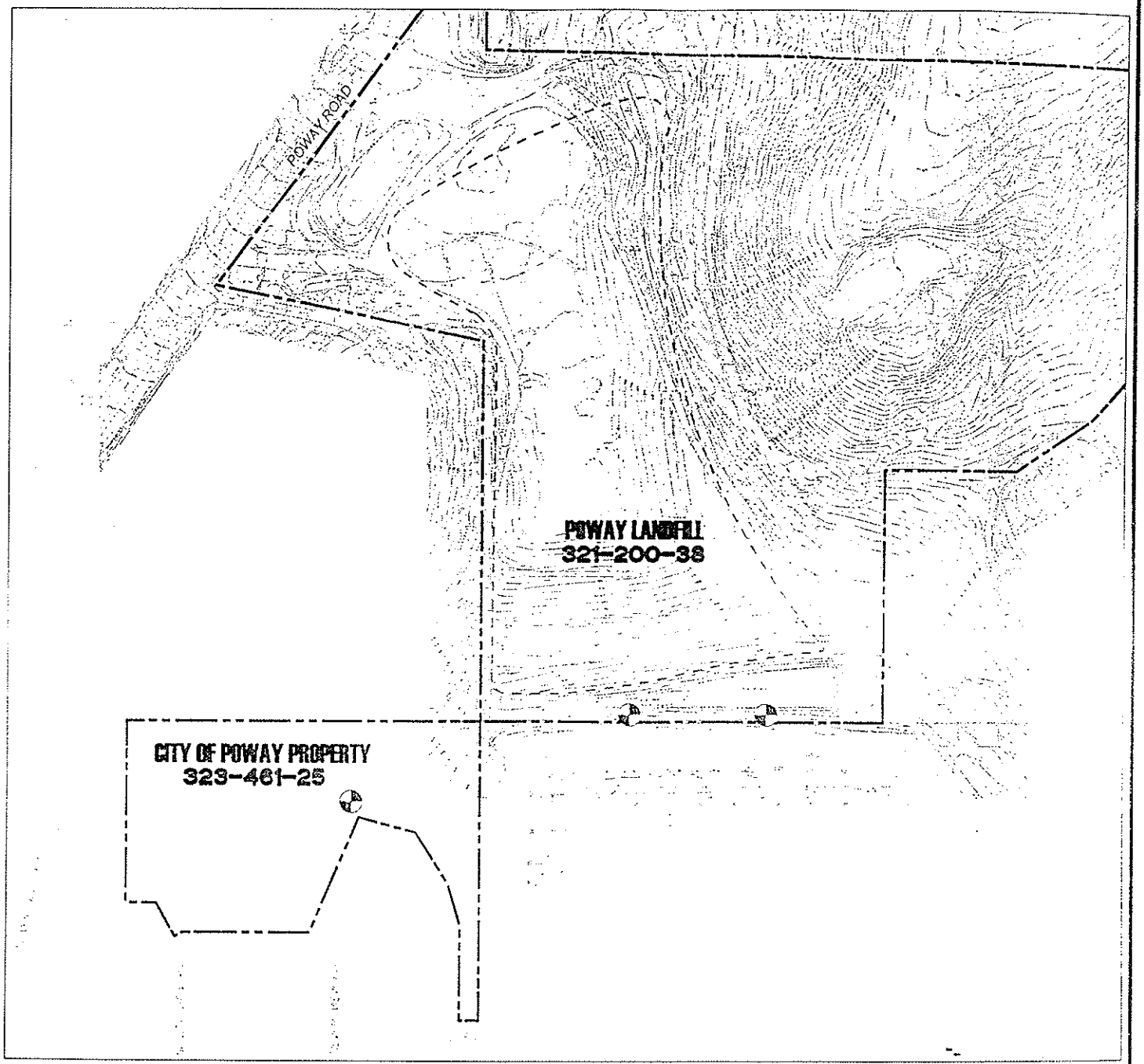
In consideration of the granting of this application, the permittee agrees to, and by this instrument, does hold the City of Poway, its elective and appointed officials, officers, agents, and employees harmless from any liability for claims for work done and material furnished upon the property, or any improvements made on the property covered by this permit. Permittee further agrees to hold and save harmless from any claim, cause of action, liability or responsibility for any accident, loss or damage to persons or property caused by the negligence of the Permittee, secured by the submitted certificate of insurance, arising out of the work undertaken pursuant to this permit, or any other permits that may be granted pursuant thereto. **I, the applicant, have read and understand the front and back of this application and will abide by its rules and regulations.**

Signature of Applicant Sean McClain Date 1-10-06

Approved Carl R. Quiram Date 1/18/06 Kenneth U. [illegible] Date 2/1/06
Traffic Engineer Senior Civil Engineer

PERMIT VALID UNTIL: Sept. 30, 2006 Inspector Dave Rizzuto Date 2/10/06

APPROVED EXTENSION DATE________ By:________



LEGEND

- PROPOSED MONITOR WELL
- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE TRASH/REFUSE BOUNDARY
- EXISTING PAVED ROAD
- EXISTING DIRT ROAD

N

300 150 0 300

SCALE IN FEET

GEOSYNTEC CONSULTANTS

BASE MAP REFERENCE:
Stewart Geo Technologies
July 2002

PROPOSED MONITOR WELL LOCATIONS
POWAY LANDFILL
POWAY, CALIFORNIA

FIGURE NO.	1
PROJECT NO.	SC0233-06-06
DATE:	MARCH 2006

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GeoSyntec Consultants

Well Construction Log

Site: Poway Landfill

Well ID: POGW-19

Drilling Company: Tri-County Drilling

Drillers:

Geologist: Sean McClain

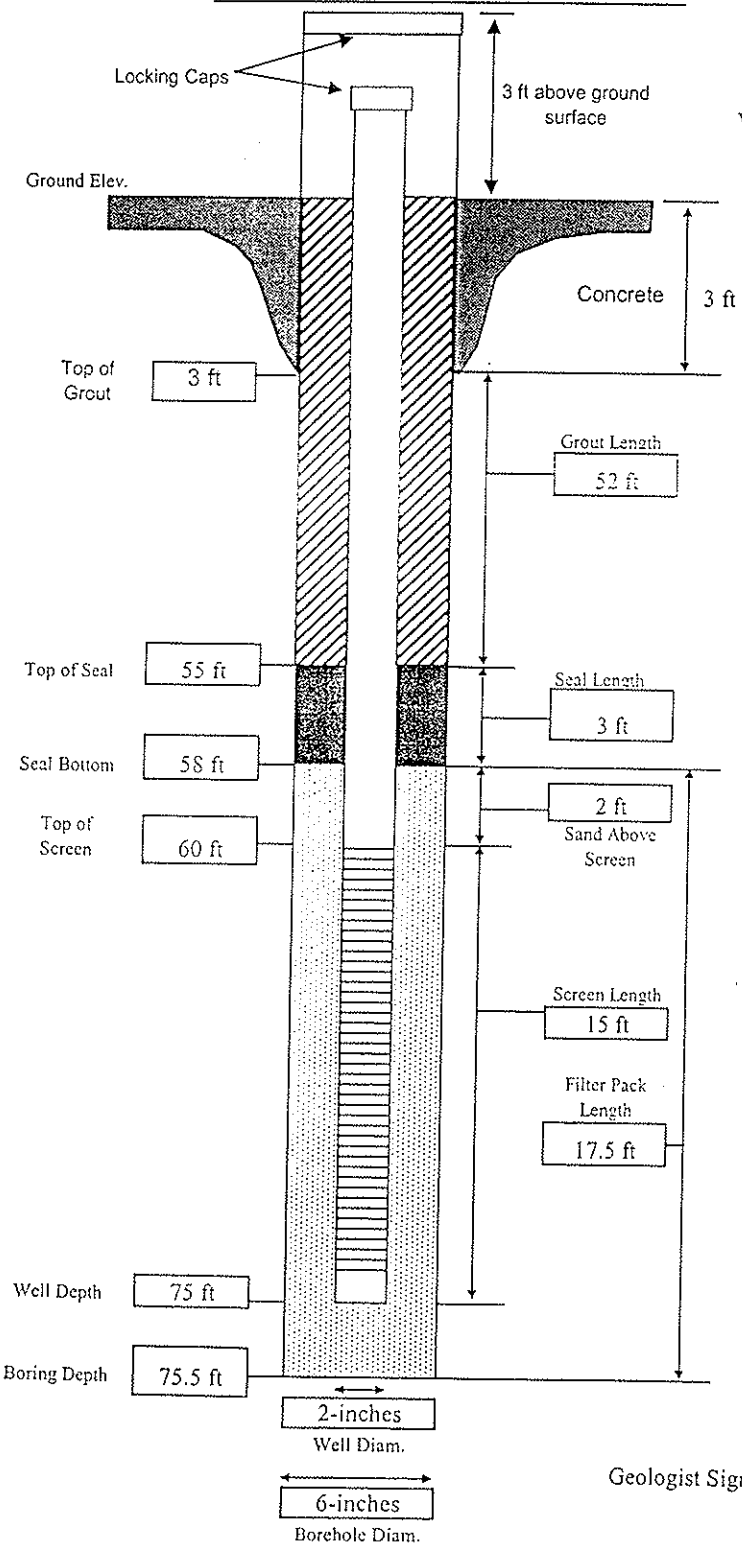
Date: 3/27/2006

Drilling Method: Air Rotary Hammer Casing

Boring Depth: 75.5 feet

Boring Diameter: 6-inches

Well Depth: 75 feet



Well Diameter: 2-inches

Well Construction:

Material: Schedule 40 PVC

Inside Diamter: 2-inches

Screen Slot Size: 0.02-inches

Screen Beg.: 60 feet End: 75 feet

Sump Y / N

Type/Lenth: NA

Filter Pack:

Type/Brand: Montery Sand #3

Amount Used:

Placement Method: Direct Pour

Seal:

Type/Brand: Enviroplug WYO-Ben

Amount Used:

Vol. Fluid Added:

Set-up Time:

Placement Method: Direct pour

Grout:

Type/Brand: Grout well WYO-Ben

Amount Used:

Vol. Fluid Added:

Placement Method: Tremmie

Well Completion:

Above Grade / Below Grade

Guard Posts? Y / N

Pad Size: 3-foot diameter

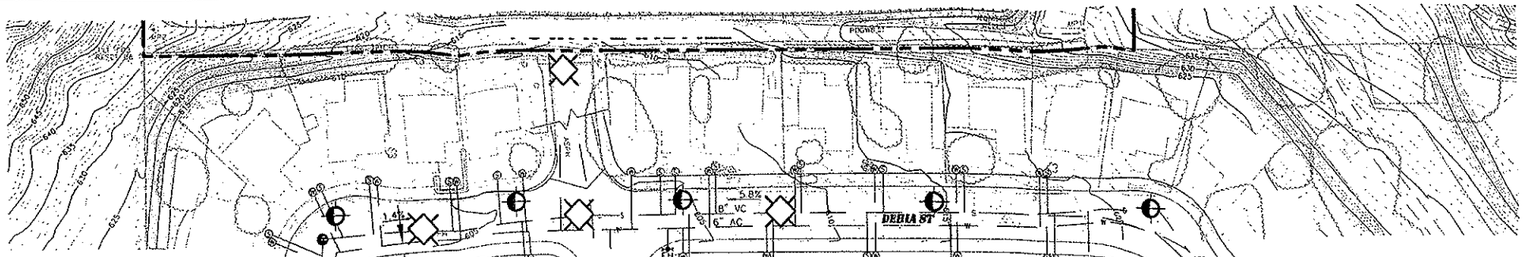
Cover Type/Size: Monument

Comments:

Geologist Signature:

LEGEND

- SOIL VAPOR WELL CLUSTER (5–10 FT. BGS)
- VAPOR WELL (5 FEET BGS)
- UTILITY SAMPLE LOCATION
- APPROXIMATE PROPERTY BOUNDARY
- EXISTING PAVED ROAD
- EXISTING DIRT ROAD



SILVER VIEW RD.

SILVER VIEW RD.

ALORA ST.

LOS OLIVOS AVE.

EL MAR AVE.

DEBRA ST.

ACTON AVE.

SILLA ST.

MORA CIRCLE

ACTON AVE.

MIRANDO ST.

8'

5" AC

8" VC

6" AC

5.8%

1.4%

2.1%

N

120 60 0 120

SCALE IN FEET

GeoSyntec Consultants

PROPOSED RESIDENTIAL SOIL VAPOR WELLS
POWAY LANDFILL
POWAY, CALIFORNIA

BASE MAP REFERENCE:
Stewart Geo Technologies
July 2002

FIGURE NO. 2
PROJECT NO. SC0233-06-06
DATE: MARCH 2006

P:\PROJECTS\SC0233\06-06-FIGURES\SC0233-06-06-PP vapor-city of poway.dwg 3/15/06 16:03 Administrator

GeoSyntec Consultants

Well Construction Log

Site: Poway Landfill

Well ID: POGW-20

Drilling Company: Tri-County Drilling

Drillers:

Geologist: Sean McClain

Date: 3/27/2006

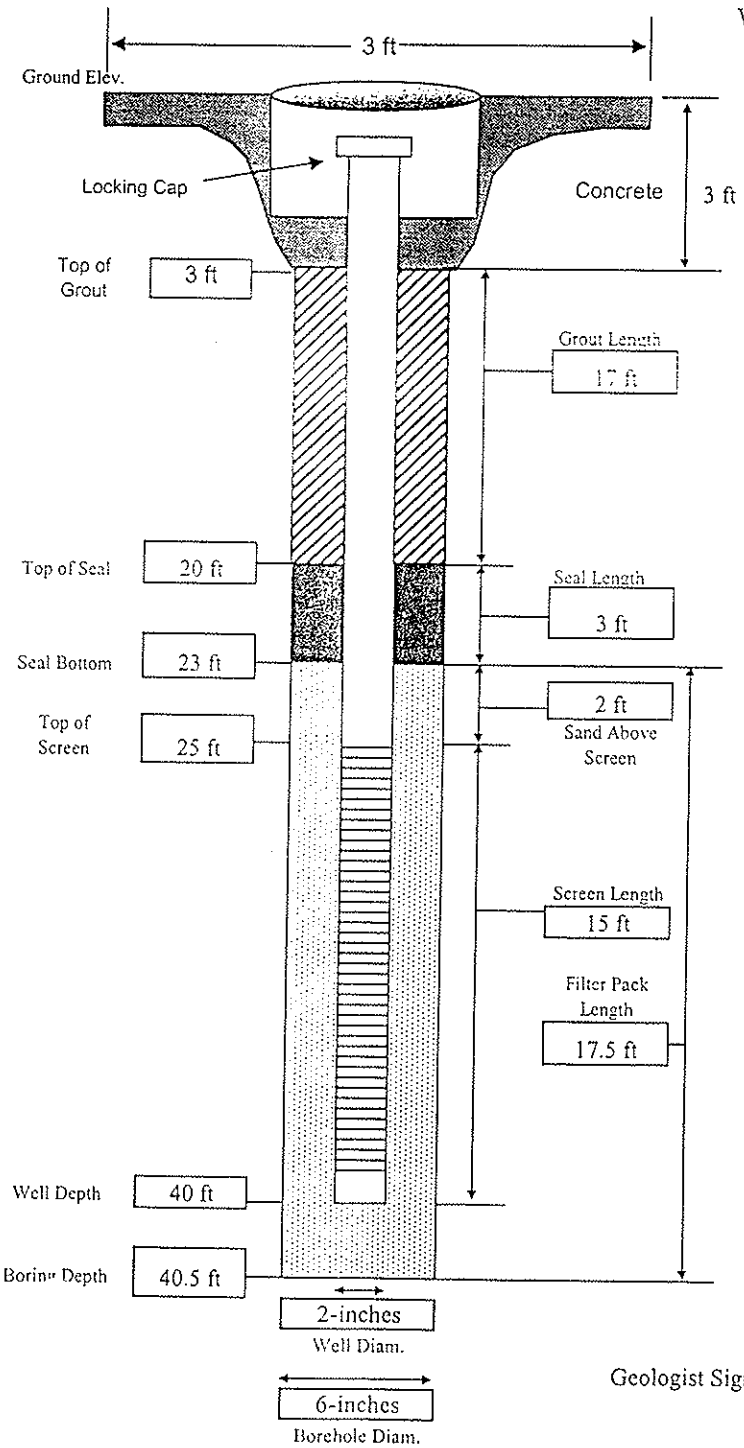
Drilling Method: Air Rotary Hammer Casing

Boring Depth: 40.5 feet

Boring Diameter: 6-inches

Well Depth: 40 feet

3 ft above ground surface



Well Diameter: 2-inches

Well Construction:

Material: Schedule 40 PVC

Inside Diamter: 2-inches

Screen Slot Size: 0.02-inches

Screen Beg.: 25 feet End: 40 feet

Sump Y / N

Type/Lenth: NA

Filter Pack:

Type/Brand: Montery Sand #3

Amount Used:

Placement Method: Direct Pour

Seal:

Type/Brand: Enviroplug WYO-Ben

Amount Used:

Vol. Fluid Added:

Set-up Time:

Placement Method: Direct pour

Grout:

Type/Brand: Grout well WYO-Ben

Amount Used:

Vol. Fluid Added:

Placement Method: Tremmie

Well Completion:

Above Grade / **Below Grade**

Guard Posts? Y / N

Pad Size: 3-foot diameter

Cover Type/Size: 12-inch steel cover

Comments:

Geologist Signature:

GeoSyntec Consultants

Well Construction Log

Site: Poway Landfill

Well ID: POGW-21

Drilling Company: Tri-County Drilling

Drillers:

Geologist: Sean McClain

Date: 3/27/2006

Drilling Method: Air Rotary Hammer Casing

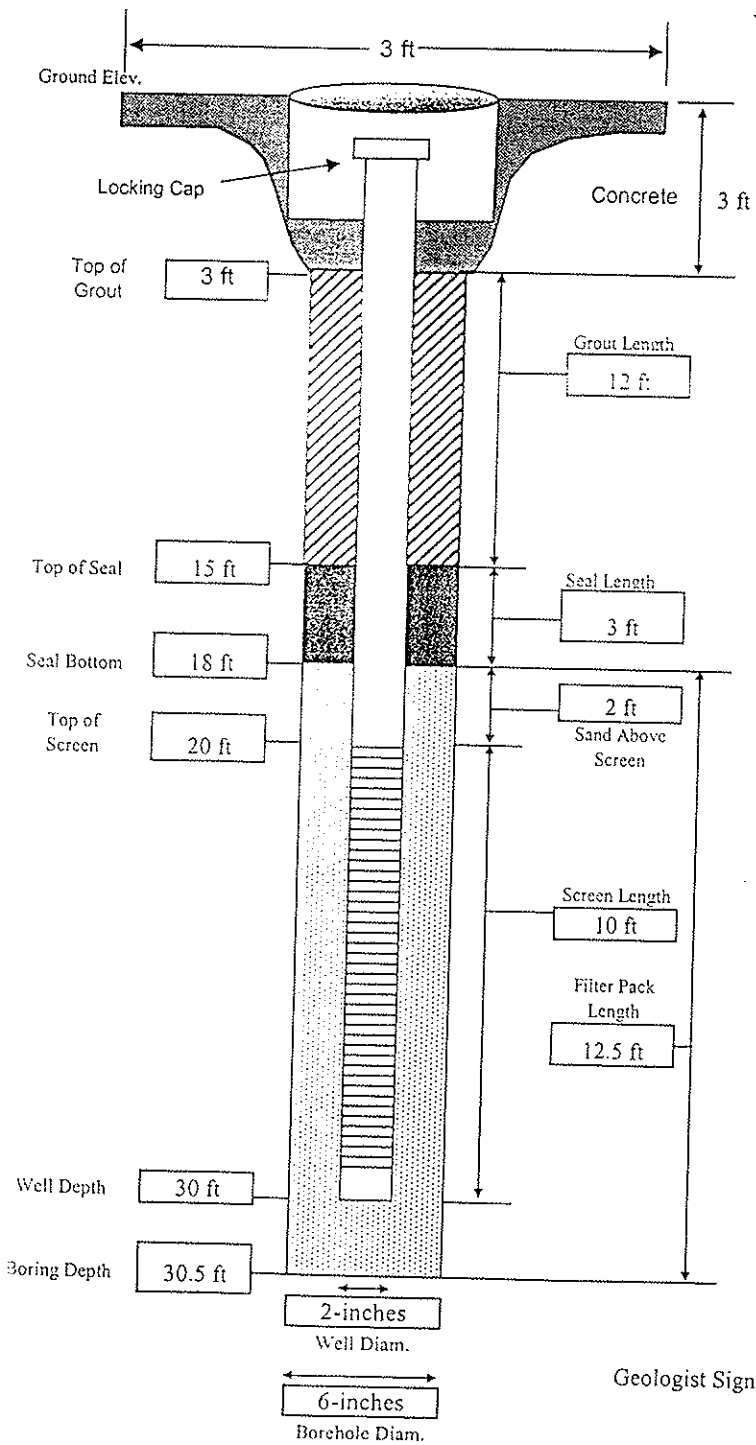
Boring Depth: 30.5 feet

Boring Diameter: 6-inches

Well Depth: 30 feet

3 ft above ground surface

Well Diameter: 2-inches



Well Construction:

Material: Schedule 40 PVC

Inside Diamter: 2-inches

Screen Slot Size: 0.02-inches

Screen Beg.: 20 feet End: 30 feet

Sump Y / N

Type/Lenth: NA

Filter Pack:

Type/Brand: Montery Sand #3

Amount Used:

Placement Method: Direct Pour

Seal:

Type/Brand: Enviroplug WYO-Ben

Amount Used:

Vol. Fluid Added:

Set-up Time:

Placement Method: Direct pour

Grout:

Type/Brand: Grout well WYO-Ben

Amount Used:

Vol. Fluid Added:

Placement Method: Tremmie

Well Completion:

Above Grade / **Below Grade**

Guard Posts? Y / N

Pad Size: 3-foot diameter

Cover Type/Size: 12-inch steel cover

Comments:

Geologist Signature:

PERMIT #LMON103898
A.P.N. #321-200-38, 323-461-25-00
EST # H86017

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM

MONITORING WELL AND BORING CONSTRUCTION AND DESTRUCTION PERMIT

SITE NAME: POWAY LANDFILL

SITE ADDRESS: 14900 POWAY RD. & SUNSET VIEW RD., POWAY CA 92064

PERMIT FOR: **INSTALL 3 GROUNDWATER MONITORING WELLS**

PERMIT APPROVAL DATE: APRIL 5, 2006

PERMIT EXPIRES ON: AUGUST 3, 2006

RESPONSIBLE PARTY: COUNTY OF SAN DIEGO, LANDFILL MANAGEMENT

PERMIT CONDITIONS:

1. Wells must have a **minimum 3-foot concrete surface seal**. The surface seal shall consist of concrete able to withstand the maximum anticipated load without cracking or deteriorating. The concrete should meet Class A specifications of a minimum 4000-pound compressive strength.

2. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

3. Within 60 days of completing work, submit a well construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

4. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 338-2339.

APPROVED BY: _____ DATE: 04/05/2006
KEVIN HEATON

NOTIFIED: 04/20/06 v.message

DEH:SAM-9075 (3/05)

COUNTY OF SAN DIEGO

DEPARTMENT OF ENVIRONMENTAL HEALTH
1255 Imperial Avenue, 3rd Floor
San Diego, CA 92101
(619)338-2228

RECEIPT NUMBER: 06-0322662
Cashier: EGAR

APN: 321-200-38-00
DATE ISSUED: 04-APR-2006
PERMIT: LMON T103898
SCOPE: MONITORING WELL/CATHODIC WELL
SITE ADDRESS: NO ADDRESS
SUBDIVISION:
CITY:

PARCEL OWNER: COUNTY OF SAN DIEGO
ADDRESS: PUBLIC AGENCY
CITY/STATE/ZIP: , 00000

PERMIT OWNER:
ADDRESS:
CITY/STATE/ZIP:

Fees Calculated 12 Months Back

Date	Fee Code	Description	Paid to Date	This Receipt	Balance Due
03-APR-2006	6LW25--EHO	MONITORING WELL	$185.00	$0.00	$0.00
03-APR-2006	6LW25-ZCRO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	-$18.50	$0.00	$0.00
03-APR-2006	6LWMAINEHO	WELL MAINTENANCE FEE	$100.00	$0.00	$0.00
03-APR-2006	6LWMAINZCO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	-$10.00	$0.00	$0.00
03-APR-2006	6LWAM--EHO	ADDITIONAL MONITORING WELL	$319.00	$1.00	$0.00
03-APR-2006	6LWAM-ZCRO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	-$32.00	$0.00	$0.00
03-APR-2006	6LWMAIXEHO	ADDITIONAL WELL MAINTENANCE FEE	$60.00	$0.00	$0.00
03-APR-2006	6LWMAIXZCO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	-$6.00	$0.00	$0.00
		Totals:		$1.00	$0.00

Payment Code	Description	Amount
CASH	CASH PAYMENT	$

Tendered:	$1.00
Change:	$0.00
Balance Due:	$0.00

COUNTY OF SAN DIEGO

DEPARTMENT OF ENVIRONMENTAL HEALTH
1255 Imperial Avenue, 3rd Floor
San Diego, CA 92101
(619)338-2228

RECEIPT NUMBER: 06-0322661
Cashier: EGARCIA

APN: 321-200-38-00
DATE ISSUED: 04-APR-2006
PERMIT: LMON T103898
SCOPE: MONITORING WELL/CATHODIC WELL
SITE ADDRESS: NO ADDRESS
SUBDIVISION:
CITY:

PARCEL OWNER: COUNTY OF SAN DIEGO
ADDRESS: PUBLIC AGENCY
CITY/STATE/ZIP: , 00000

PERMIT OWNER:
ADDRESS:
CITY/STATE/ZIP:

Fees Calculated 12 Months Back

Date	Fee Code	Description	Paid to Date	This Receipt	Balance Due
03-APR-2006	6LW25--EHO	MONITORING WELL	$0.00	$185.00	$0.00
03-APR-2006	6LW25-ZCRO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	$0.00	-$18.50	$0.00
03-APR-2006	6LWMAINEHO	WELL MAINTENANCE FEE	$0.00	$100.00	$0.00
03-APR-2006	6LWMAINZCO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	$0.00	-$10.00	$0.00
03-APR-2006	6LWAM--EHO	ADDITIONAL MONITORING WELL	$0.00	$319.00	$1.00
03-APR-2006	6LWAM-ZCRO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	$0.00	-$32.00	$0.00
03-APR-2006	6LWMAIXEHO	ADDITIONAL WELL MAINTENANCE FEE	$0.00	$60.00	$0.00
03-APR-2006	6LWMAIXZCO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	$0.00	-$6.00	$0.00
		Totals:		$597.50	$1.00

Payment Code	Description	Amount
CHE..	1063	$597.50

Tendered:	$597.50
Change:	$0.00
Balance Due:	$1.00

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

RECEIVED
2006 MAR 30 PM 1 40
D. E. H.
HAZMAT

OFFICE USE ONLY
PERMIT LMON # 103898
SAM CASE Y/N # _____
DATE RECEIVED: _____
FEE PAID: _____
CHECK # _____

A. RESPONSIBLE PARTY County of San Diego, Land Use Management Phone 858-495-5480
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address 5201 Ruffin Rd Ste. D City San Diego State CA Zip 92123
Contact Person Barry Peter Phone 858-495-5480 Ext. _____ Fax _____

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # _____

C. CONSULTING FIRM GeoSyntec Consultants
Mailing Address 10875 Rancho Bernardo Rd ste 200 City San Diego State CA Zip 92127
Registered Professional Sam Williams Registration # 4658 (PG)
Contact Person Sean McClain Phone 858-674-6559 Ext. 911 Fax 858-674-6586

D. DRILLING COMPANY TRI-COUNTY DRILLING, INC. C57# 547737
Contact Name Tim Duddie
Mailing Address 9631 Candida Street City San Diego State CA Zip 92126-
Phone 858-271-0099 Fax 858-271-0233

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☒ Groundwater	3
☐ Vadose	___
☐ Boring	___
☐ Other	___

NUMBER OF WELLS TO BE DESTROYED

☐	___

MATERIALS TO BE USED

CASING
Not Applicable ___
Type PVC
Gauge SCH 40
Diameter 2-inch
Well Screen Size 0.02
Filter Pack #3

SEAL/BORING BACKFILL
☐ Neat Cement
☒ Cement & Bentonite
☐ Sand-Cement
☐ Bentonite
☐ Other
Borehole diameter 6-inch

Drilling Method
☐ Auger ☒ Air Rotary
☐ Mud Rotary ☐ Other
☐ Percussion

PROPOSED CONSTRUCTION
Estimated groundwater depth: _____
Estimated depth of boring _____ ft.

Concrete surface seal	0 to 3
Annular seal	See Diagram ___ to ___
Bentonite transition seal	___ to ___
Filter Pack	___ to ___
Perforation	___ to ___

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE Barry Peter DATE 3-27-06

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

PG/RCE SIGNATURE Sam Williams DATE 3-29-06

Permit Fees In Effect for July 1, 2005 - June 30, 2006

G. FEES (in effect beginning July 1, 2005, through June 30, 2006)

The County Board of Supervisors authorized a *10% credit, for the Fiscal Year ending June 30, 2006,* to be applied to the Department of Environmental Health customers. This credit is being provided to qualified fee-based programs that have contributed to the cost reduction/cost containment/cost avoidance efforts initiated by the Department. This *fee adjustment, for the Fiscal Year ending June 30, 2006,* is applicable to fees and permits due and/or obtained during this period. The 10% is not applicable to enforcement fees or fees relating to non-compliance of permit regulations.

ACTIVITY	FEE SCHEDULE FEE -- ONE-TIME FISCAL YEAR 10% CREDIT	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	$185.00 for the first monitoring well $185.00 – 10% <$18.50> =	1 x $166.50 $ 165.50
Permit for Well Maintenance Inspection **(Valid for three years)**	$100.00 for first well maintenance inspection $100.00 – 10% <$10.00> =	1 x $ 90.00 $ 90.00
Each Additional New Well	$160.00 for each additional well installation $160.00 – 10% <$16.00> = $ 30.00 for each additional well maintenance inspection $ 30.00 – 10% <$ 3.00> =	2 x $144.00 $ 288.00 2 x $ 27.00 $ 54.00
Permit for Borings Only *(CPT's, Hydropunch, Geoprobes,* Temporary Well Points, etc.)	$185.00 for the first boring $185.00 – 10% <$18.50> = $ 50.00 for each additional boring $ 50.00 – 10% <$ 5.00> =	1 x $166.50 $ _____ _____ x $ 45.00 $ _____
Permit for Well Destructions Only	$185.00 for the first destruction $185.00 – 10% <$18.50> = $120.00 for each additional destruction $120.00 – 10% <$12.00> =	1 x $166.50 $ _____ _____ x $108.00 $ _____
Permit for any Combination of Well Installations, Borings, & Destructions *(except UST backfill permit)* Permit for any Combination of Well Installations, Borings, & Destructions *(except UST backfill permit)*	The first activity will be $185.00. $185.00 – 10% <$18.50> = Additional activities will be as follows: $160.00 for each additional well $160.00 – 10% <$16.00> = $100.00 for first well maintenance inspection $100.00 – 10% <$10.00> = $ 30.00 for each additional well maintenance inspection $ 30.00 – 10% <$ 3.00> = $ 50.00 for each additional boring $ 50.00 – 10% <$ 5.00> = $120.00 for each well destruction $120.00 – 10% <$12.00> =	1 x $166.50 $ _____ _____ x $144.00 $ _____ 1 x $ 90.00$ _____ _____ x $ 27.00 $ _____ _____ x $ 45.00 $ _____ _____ x $108.00 $ _____
	TOTAL COST OF PERMIT	$ 597.50
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	(Flat Fee) $320.00 – 10% <$32.00> =	$288.00

F. SITE INFORMATION

1. **ASSESSOR'S PARCEL NUMBER** 321-200-38 and 323-461-25
   Site Name Poway Landfill
   Site Address 14900 Poway Road City Poway Zip 92064-

   PROPERTY OWNER County of San Diego
   Phone 858-495-5480 Ext. Fax _____
   Mailing Address 5201 Ruffin Road, Suite D City San Diego State CA
   Zip 92123-

   NUMBER OF WELLS 12 **TYPE OF WELLS** Vapor Wells

2. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

3. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

4. **ASSESSOR'S PARCEL NUMBER** _____
   Site Name _____
   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____
   Phone _____ Ext. _____ Fax _____
   Mailing Address _____ City _____ State __ Zip _____

   NUMBER OF WELLS _____ **TYPE OF WELLS** _____

H. **QUESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.**

1. If wells are to be destroyed, provide a description of method of destruction NA

2. What is the purpose of the well/boring investigation?

   ☒ a. Part of an ongoing site assessment case in which DEH or another government regulator is the lead agency.

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☐ c. Geotechnical investigation for proposed construction, land stabilization or:

   ☐ d. Other: _____

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? The monitor wells will be installed imediately after the borings are completed

4. What field procedures will be utilized to determine if contamination exists? The cuttings will be screened with a photoionization detector (PID) and a composite sample from the cuttings will be submitted to an analytical laboratory for analysis

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? Groundwater samples will be submitted to an analytical laboratory

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? VOCs by EPA Method 8260B, General Chemistry and Metals by EPA Method 6010

7. How will samples be transported and preserved? Groundwater samples will be sent to lab by curier (with ice perservative).

8. What sampling methods will be used? Soil cuttings will be stored in 55-gallon drums and one composite soil sample will be collected from all drums.

9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www/sdcounty.ca.gov/deh/lwq/sam/monitoring_well.html). :Yes, The borehole will be reduced from 8" to 4". The 2" well screen and filter pack will be constructed in the 4" borehole, the seal will be constructed in the 8" borehole (See well diagrams).

10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. No

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination? Drilling equipment will be steamed cleaned prior to drilling onsite

12. What methods will be used to clean sampling equipment? Sampling equipment will be cleaned by three bucket wash method.

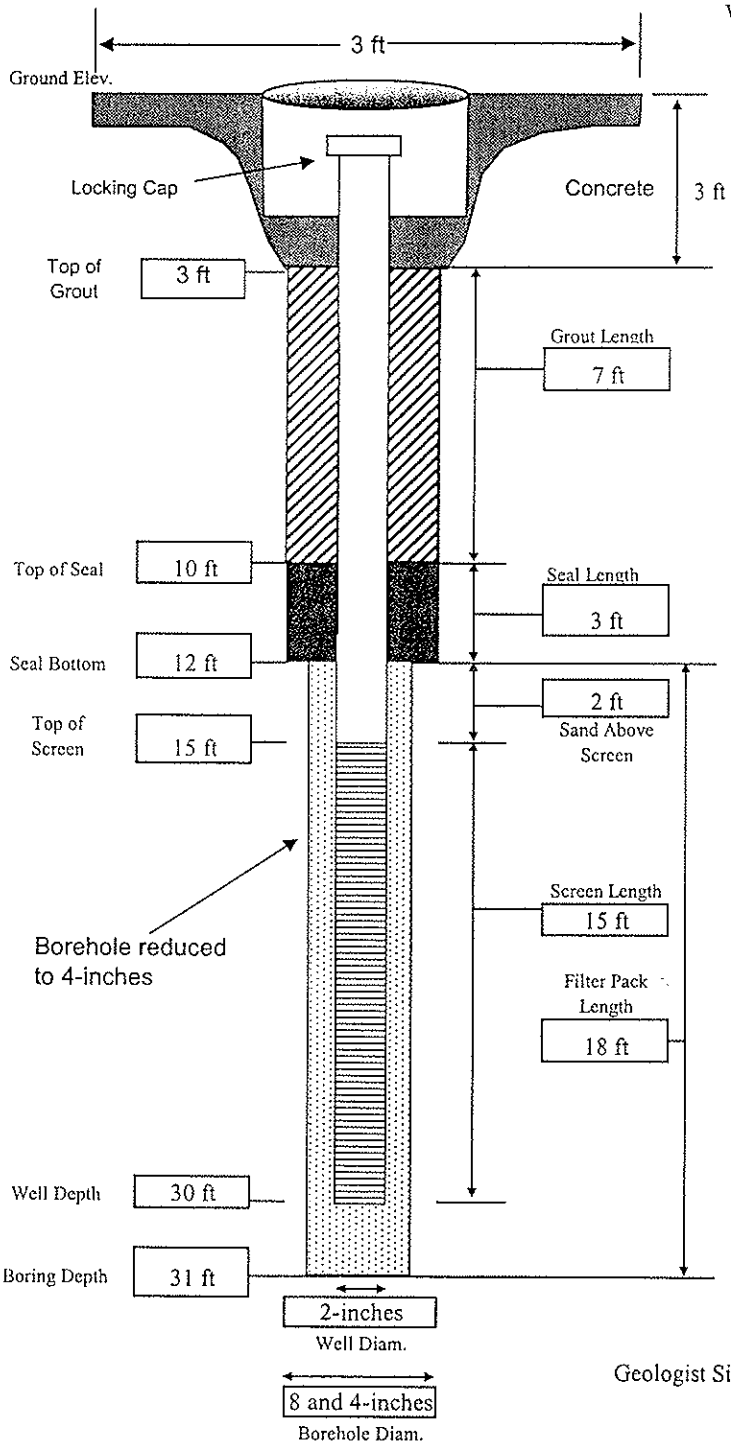
13. What cleaning method will be used to clean casing and screen prior to installation? New PVC pipe will be used which will arrive onsite pre-wrapped

GeoSyntec Consultants

Well Construction Log

Site: Poway Landfill
Date: 4/3/2006
Well ID: POGW-21
Drilling Method: Hollow Stem Auger/Rock Coring
Drilling Company: Tri-County Drilling
Boring Depth: 31 feet
Drillers:
Boring Diameter: 6-inches
Geologist: Sean McClain
Well Depth: 30 feet

3 ft above ground surface



Well Diameter: 2-inches

Well Construction:

- Material: Schedule 40 PVC
- Inside Diamter: 2-inches
- Screen Slot Size: 0.02-inches
- Screen Beg.: 15 feet End: 30 feet
- Sump Y / N
- Type/Lenth: NA

Filter Pack:

- Type/Brand: Montery Sand #3
- Amount Used:
- Placement Method: Direct Pour

Seal:

- Type/Brand: Enviroplug WYO-Ben
- Amount Used:
- Vol. Fluid Added:
- Set-up Time:
- Placement Method: Direct pour

Grout:

- Type/Brand: Grout well WYO-Ben
- Amount Used:
- Vol. Fluid Added:
- Placement Method: Tremmie

Well Completion:

- Above Grade / **Below Grade**
- Guard Posts? Y / **N**
- Pad Size: 3-foot diameter
- Cover Type/Size: 12-inch steel cover

Comments:

Geologist Signature:

GeoSyntec Consultants

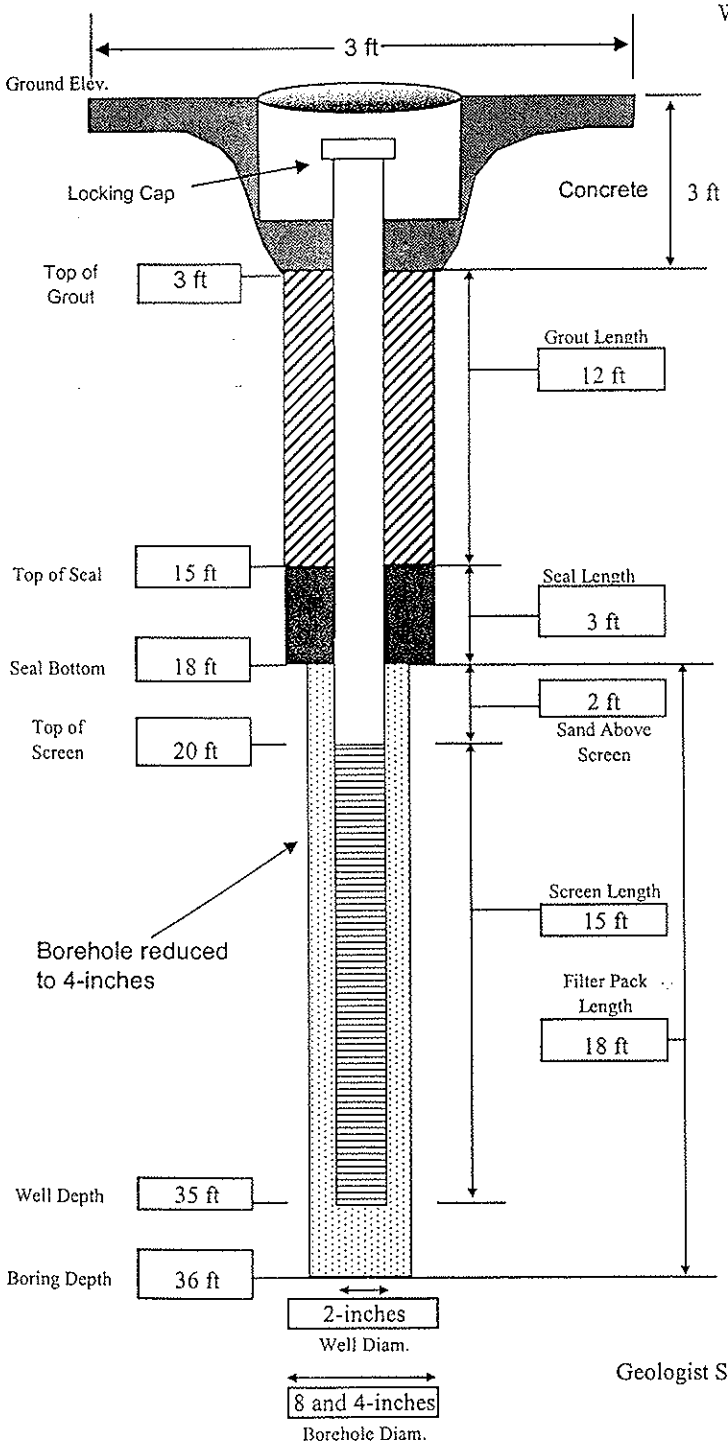
Well Construction Log

Site: Poway Landfill
Well ID: POGW-20
Drilling Company: Tri-County Drilling
Drillers:
Geologist: Sean McClain

Date: 4/3/2006
Drilling Method: Hollow Stem Auger/Rock Coring
Boring Depth: 36 feet
Boring Diameter: 6-inches
Well Depth: 35 feet

3 ft above ground surface

Well Diameter: 2-inches



Well Construction:

Material: Schedule 40 PVC
Inside Diamter: 2-inches
Screen Slot Size: 0.02-inches
Screen Beg.: 20 feet End: 35 feet
Sump Y / N
Type/Lenth: NA

Filter Pack:

Type/Brand: Montery Sand #3
Amount Used:
Placement Method: Direct Pour

Seal:

Type/Brand: Enviroplug WYO-Ben
Amount Used:
Vol. Fluid Added:
Set-up Time:
Placement Method: Direct pour

Grout:

Type/Brand: Grout well WYO-Ben
Amount Used:
Vol. Fluid Added:
Placement Method: Tremmie

Well Completion:

Above Grade / **Below Grade**
Guard Posts? Y / N
Pad Size: 3-foot diameter
Cover Type/Size: 12-inch steel cover

Comments:

Geologist Signature:

H. **QUESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.**

1. If wells are to be destroyed, provide a description of method of destruction NA

2. What is the purpose of the well/boring investigation?

   ☒ a. Part of an ongoing site assessment case in which DEH or another government regulator is the lead agency.

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☐ c. Geotechnical investigation for proposed construction, land stabilization or:

   ☐ d. Other: _____

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? The monitor wells will be installed imediately after the borings are completed

4. What field procedures will be utilized to determine if contamination exists? The cuttings will be screened with a photoionization detector (PID) and a composite sample from the cuttings will be submitted to an analytical laboratory for analysis

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? Groundwater samples will be submitted to an analytical laboratory

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? VOCs by EPA Method 8260B, General Chemistry and Metals by EPA Method 6010

7. How will samples be transported and preserved? Groundwater samples will be sent to lab by curier (with ice perservative).

8. What sampling methods will be used? Soil cuttings will be stored in 55-gallon drums and one composite soil sample will be collected from all drums.

9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www/sdcounty.ca.gov/deh/lwq/sam/monitoring_well.html). :No

10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. No

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination? Drilling equipment will be steamed cleaned prior to drilling onsite

12. What methods will be used to clean sampling equipment? Sampling equipment will be cleaned by three bucket wash method.

13. What cleaning method will be used to clean casing and screen prior to installation? New PVC pipe will be used which will arrive onsite pre-wrapped

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2315/1-800-253-9933
www.sdcounty.ca.gov/deh/lwq

RICHARD HAAS
ASSISTANT DIRECTOR

PROPERTY OWNER RESPONSIBILITY ACKNOWLEDGEMENT

Proposed locations for subsurface work:

Property Address: 14900 Poway Rd, Poway, CA

Assessor's Parcel Number (APN): 321-300-38

I, Barry Pulver, owner of the property/properties listed above, give my permission to Geo Systems Coastal Inc (consulting company, contractor) to conduct the following work at the locations stated above.

☒ Install 2 monitoring wells ☐ Destroy _____ monitoring wells ☐ Drill _____ soil borings

The person who causes to have a monitoring well installed or an existing well destroyed on this property is defined as the *Responsible Party*. San Diego County Code, Section 67.424, states that: "Monitoring wells shall be maintained to meet construction or destruction standards. If a monitoring well does not meet construction or destruction standards, the *Responsible Party* must repair, reconstruct or destroy the monitoring well so it meets the standards. The property owner, if different than the *Responsible Party*, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the *Responsible Party* does not complete the necessary actions."

A soil boring is used specifically to sample soil and, because there are construction and destruction standards, is included in the definition of a monitoring well even though no maintenance is required. These standards are outlined in the County of San Diego Site Assessment and Mitigation (SAM) Manual and the State of California Well Standards Bulletin 74-90.

I understand that Sam Williams (registered professional) of Geo Systems Coastal Inc (consulting company) and an authorized signer for Tri-County Drilling (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

I also understand that if either the registered professional and/or the licensed drilling company should fail in their responsibilities as defined in San Diego County Code, Section 67.424, I, as the property owner, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the Responsible Party does not complete the necessary actions.

The scope of work covered by this Acknowledgement will expire one year from the date of the property owner's signature below. If an extension of time beyond one year is required to complete the proposed drilling activities or additional work is proposed, a new Property Owner Responsibility Agreement will be required.

Property Owner Signature: _____ Date: 3/29/06

Print Name: Barry Pulver Title: _____

Company: _____

Mailing Address: _____

ROW NO. 06-09

CITY OF POWAY

PUBLIC RIGHT-OF-WAY PERMIT

Associated Plan No. See Attachem Location Map
Contact Person Sean McClain
Address 11305 Rancho Bernardo Rd S 101
San Diego, CA

APPLICANT PLEASE FILL OUT NUMBERED ITEMS 1-4:

Phone No. (858) 674-6559

1. APPLICANT, GeoSyntec Consultants, hereby requests permission to work in the following streets or other public easements (provide owner, address, and property description): Property adjacent to southwest corner of Poway Landfill (Parcel No. 323-461-25)
2. TO INSTALL (provide type of installation and approximate dimensions, length, width, and depth): One groundwater monitor well: 6" casing to approximately 75' Depth with monument finish, according to San Diego Site Assessment & Mitigation Guidelines.
3. X PRIVATE DEVELOPMENT ___SOUTH POWAY ___CITY PROJECT
4. Contractor Tri-County Drilling Subcontractors None

Job superintendent Dave Maske License No. 547737

Address 9631 Candida Street, San Diego, CA 92126

Contractor's License No.______ Type of License C57

APPLICANT MUST SUBMIT THE FOLLOWING WITH THE APPLICATION:

1. Copy of the Contractor's license (Type A required).
2. Certificate of insurance for worker's compensation and general liability in the amount of $ 1 million naming the City as an additional insured.
3. Detailed and scaled traffic control plan for all phases of work.
4. Detailed construction schedule and clear description of work.
5. Itemized cost estimate (unless fees were previously paid with an approved plan listed above).
6. All applicable fees and deposits.

PRE-APPROVED
NOT FOR CONSTRUCTION
PENDING PRE-CONSTRUCTION MEETING

NOTE: Application will not be accepted unless items 1-6 are provided. In some cases, the City will consider a waiver of a part of the requirements of items 1-3 with submittal of a waiver request.

Hours of work 8:30 am - 3:30 pm (8:30 a.m. and 3:30 p.m. unless otherwise specified).

ACCESS TO SITE IS TO BE VIA ROUTE 2 ONLY. KW

Contractor must call Underground Service Alert at 1-800-422-4133 to have utilities marked out before the preconstruction meeting. After approval of permit, the City Inspector will contact the contractor and set up a time for a pre-construction meeting. City inspector must have a minimum of 48-hours notification prior to scheduling of pre-construction meeting and construction. Location of all utility cabinets or structures are subject to review, and may require an MDRA to be processed through Development Services Department, Planning division.

In consideration of the granting of this application, the permittee agrees to, and by this instrument, does hold the City of Poway, its elective and appointed officials, officers, agents, and employees harmless from any liability for claims for work done and material furnished upon the property, or any improvements made on the property covered by this permit. Permittee further agrees to hold and save harmless from any claim, cause of action, liability or responsibility for any accident, loss or damage to persons or property caused by the negligence of the Permittee, secured by the submitted certificate of insurance, arising out of the work undertaken pursuant to this permit, or any other permits that may be granted pursuant thereto. **I, the applicant, have read and understand the front and back of this application and will abide by its rules and regulations.**

Signature of Applicant Sean McClain Date 1-10-06

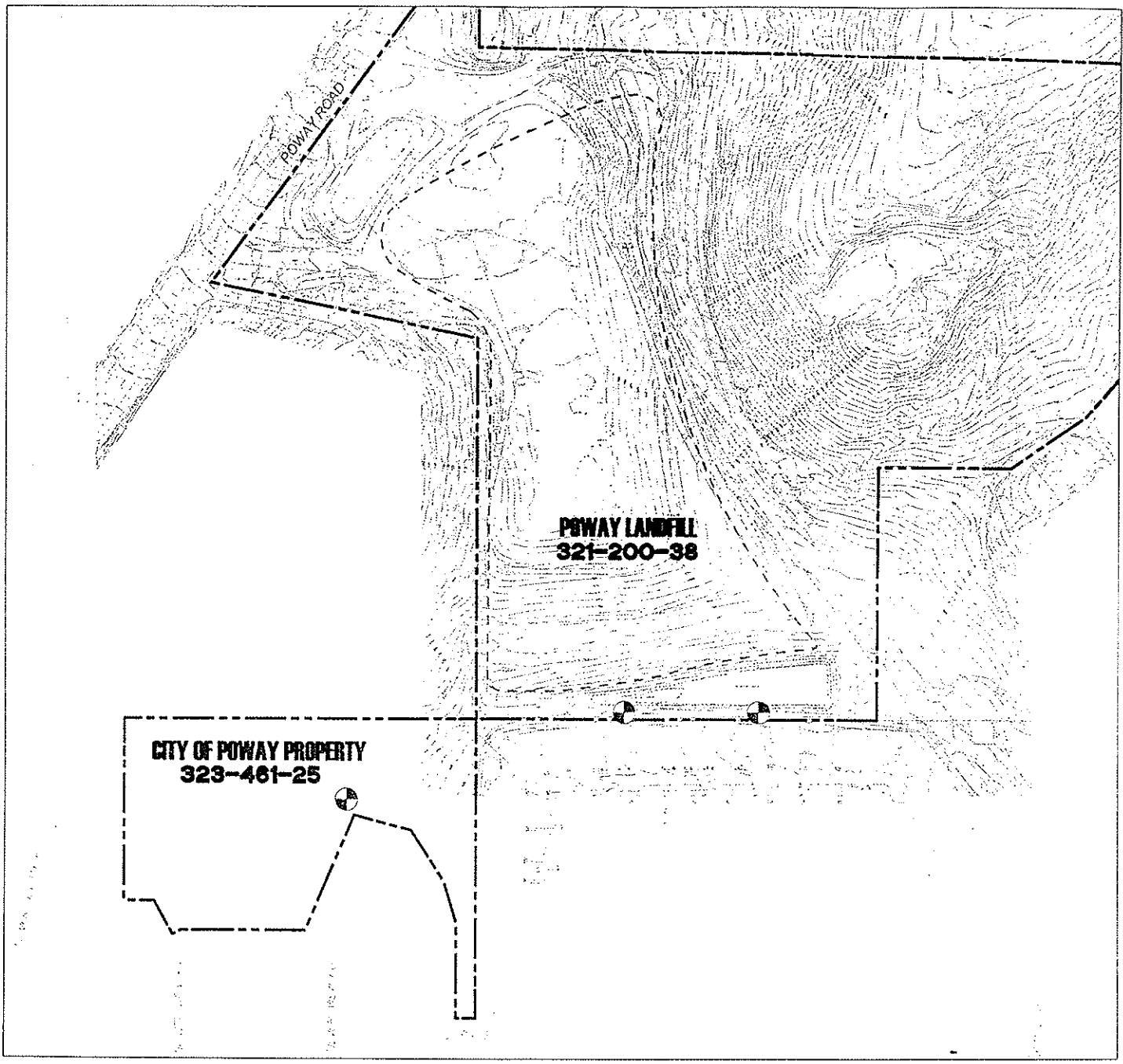
Approved Carl R. Quiram Date 1/18/06
Traffic Engineer

Kenneth W. [signature] Date 2/10/06
Senior Civil Engineer

PERMIT VALID UNTIL: Sept 30, 2006

Inspector Dave Rizzuto Date 2/10/06

APPROVED EXTENSION DATE______ By:______



LEGEND

- PROPOSED MONITOR WELL
- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE TRASH/REFUSE BOUNDARY
- EXISTING PAVED ROAD
- EXISTING DIRT ROAD

N

300 150 0 300

SCALE IN FEET

GeoSyntec Consultants

BASE MAP REFERENCE:
Stewart Geo Technologies
July 2002

PROPOSED MONITOR WELL LOCATIONS
POWAY LANDFILL
POWAY, CALIFORNIA

FIGURE NO.	1
PROJECT NO.	SC0233-06-06
DATE:	MARCH 2006

P:\PRJ\SDCadd\CAD\SC0233\06-06-FIGURES\06-06-VAPOR\SC0233-06-06-PP-MW.dwg 3/29/06 14:17 Administrator

GeoSyntec Consultants

Well Construction Log

Site: Poway Landfill

Well ID: POGW-19

Drilling Company: Tri-County Drilling

Drillers:

Geologist: Sean McClain

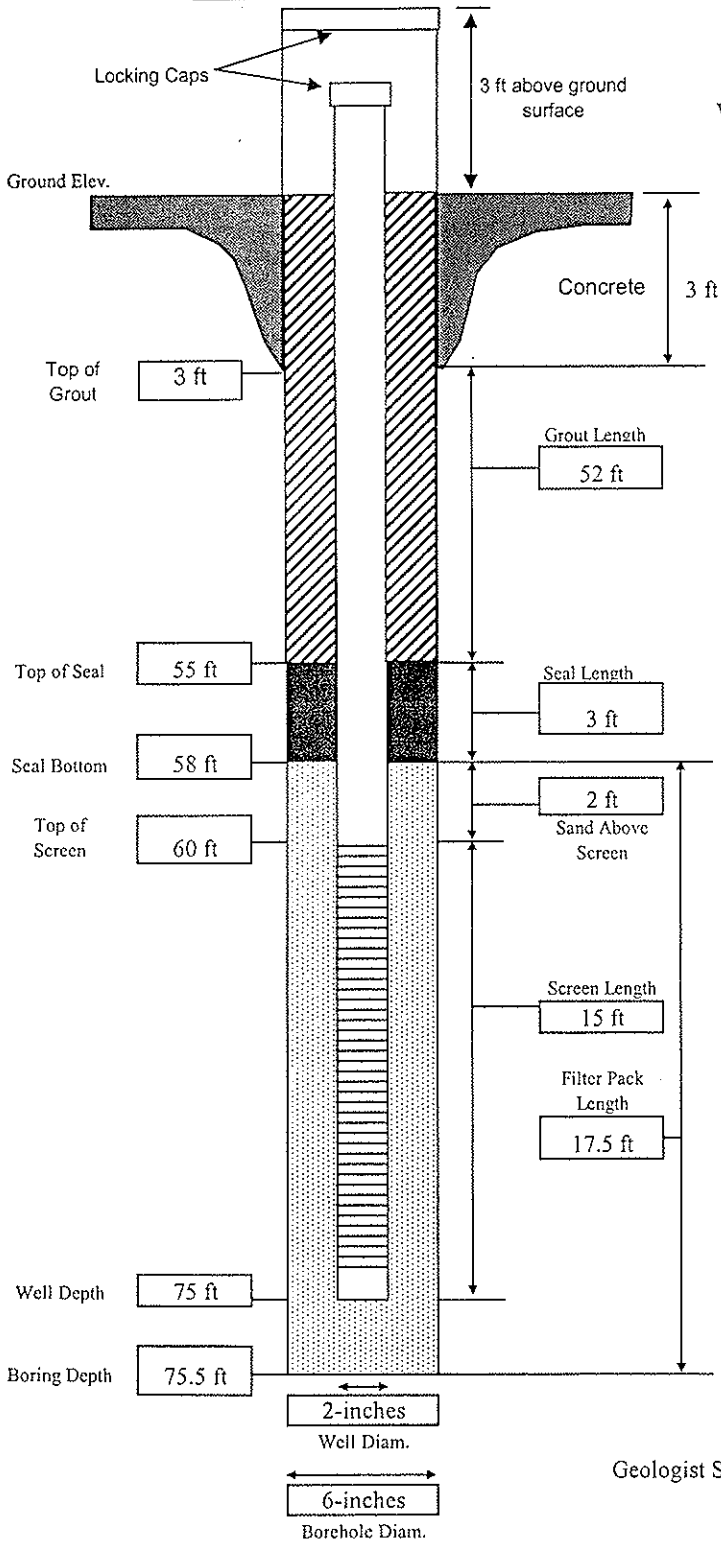
Date: 3/27/2006

Drilling Method: Air Rotary Hammer Casing

Boring Depth: 75.5 feet

Boring Diameter: 6-inches

Well Depth: 75 feet



Well Diameter: 2-inches

Well Construction:

- Material: Schedule 40 PVC
- Inside Diamter: 2-inches
- Screen Slot Size: 0.02-inches
- Screen Beg.: 60 feet End: 75 feet
- Sump Y / N
- Type/Lenth: NA

Filter Pack:

- Type/Brand: Montery Sand #3
- Amount Used:
- Placement Method: Direct Pour

Seal:

- Type/Brand: Enviroplug WYO-Ben
- Amount Used:
- Vol. Fluid Added:
- Set-up Time:
- Placement Method: Direct pour

Grout:

- Type/Brand: Grout well WYO-Ben
- Amount Used:
- Vol. Fluid Added:
- Placement Method: Tremmie

Well Completion:

- **Above Grade** / Below Grade
- Guard Posts? Y / N
- Pad Size: 3-foot diameter
- Cover Type/Size: Monument
- Comments:

Geologist Signature:

GeoSyntec Consultants

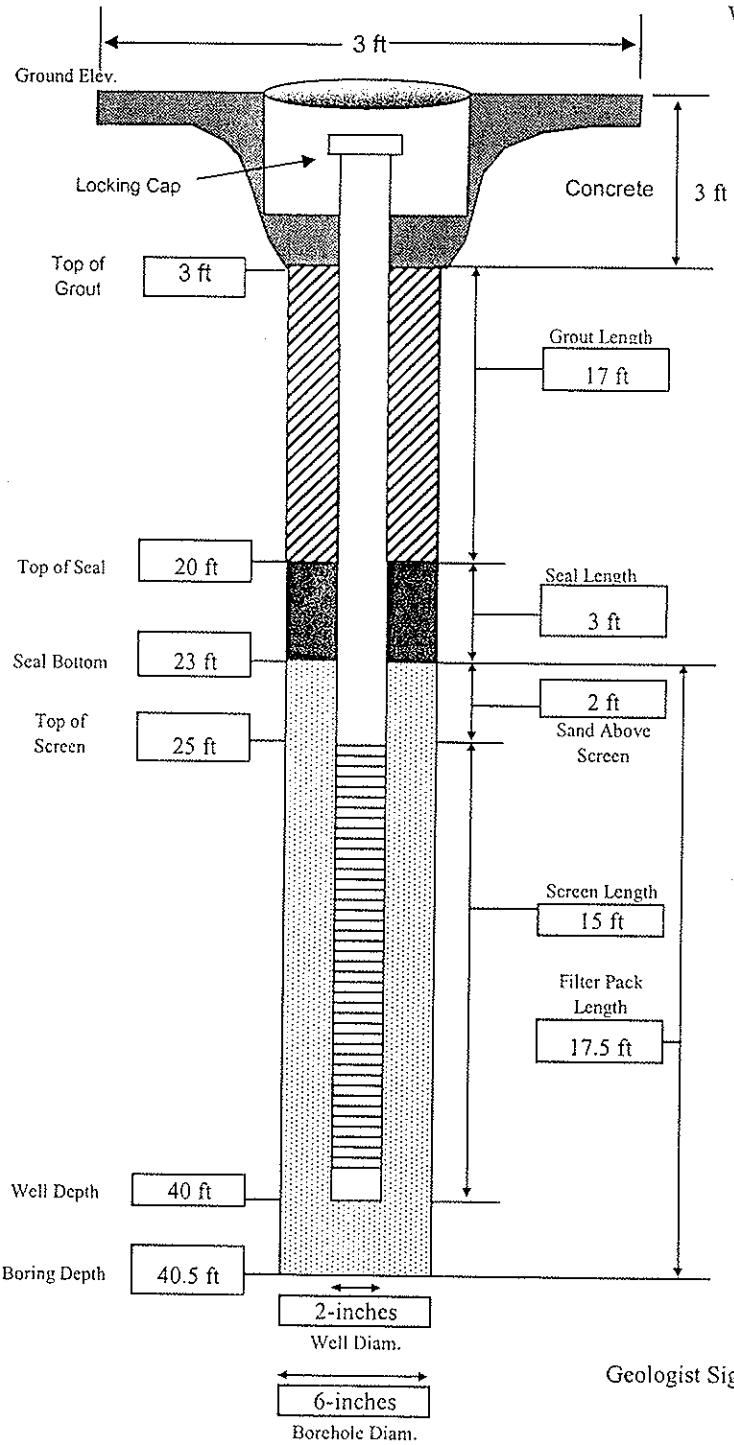
Well Construction Log

Site: Poway Landfill
Well ID: POGW-20
Drilling Company: Tri-County Drilling
Drillers:
Geologist: Sean McClain

Date: 3/27/2006
Drilling Method: Air Rotary Hammer Casing
Boring Depth: 40.5 feet
Boring Diameter: 6-inches
Well Depth: 40 feet

3 ft above ground surface

Well Diameter: 2-inches



Well Construction:

Material: Schedule 40 PVC
Inside Diamter: 2-inches
Screen Slot Size: 0.02-inches
Screen Beg.: 25 feet End: 40 feet
Sump Y / N
Type/Lenth: NA

Filter Pack:

Type/Brand: Montery Sand #3
Amount Used:
Placement Method: Direct Pour

Seal:

Type/Brand: Enviroplug WYO-Ben
Amount Used:
Vol. Fluid Added:
Set-up Time:
Placement Method: Direct pour

Grout:

Type/Brand: Grout well WYO-Ben
Amount Used:
Vol. Fluid Added:
Placement Method: Tremmie

Well Completion:

Above Grade / **Below Grade**
Guard Posts? Y / N
Pad Size: 3-foot diameter
Cover Type/Size: 12-inch steel cover
Comments:

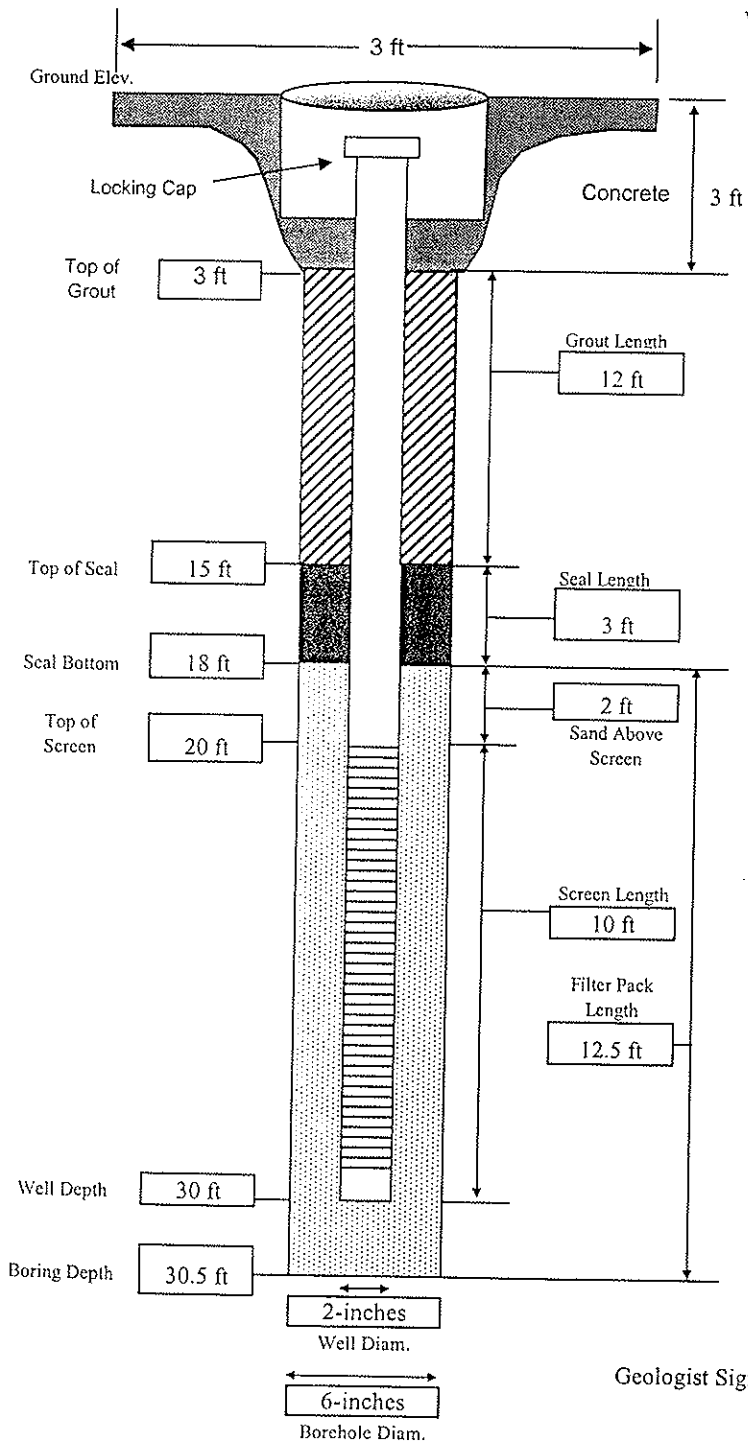
Geologist Signature:

GeoSyntec Consultants

Well Construction Log

Site: Poway Landfill
Well ID: POGW-21
Drilling Company: Tri-County Drilling
Drillers:
Geologist: Sean McClain

Date: 3/27/2006
Drilling Method: Air Rotary Hammer Casing
Boring Depth: 30.5 feet
Boring Diameter: 6-inches
Well Depth: 30 feet



Well Diameter: 2-inches

Well Construction:

- Material: Schedule 40 PVC
- Inside Diamter: 2-inches
- Screen Slot Size: 0.02-inches
- Screen Beg.: 20 feet End: 30 feet
- Sump Y / N
- Type/Lenth: NA

Filter Pack:

- Type/Brand: Montery Sand #3
- Amount Used:
- Placement Method: Direct Pour

Seal:

- Type/Brand: Enviroplug WYO-Ben
- Amount Used:
- Vol. Fluid Added:
- Set-up Time:
- Placement Method: Direct pour

Grout:

- Type/Brand: Grout well WYO-Ben
- Amount Used:
- Vol. Fluid Added:
- Placement Method: Tremmie

Well Completion:

- Above Grade / **Below Grade**
- Guard Posts? Y / N
- Pad Size: 3-foot diameter
- Cover Type/Size: 12-inch steel cover

Comments:

Geologist Signature:

PERMIT #LMON103910
A.P.N. #321-200-38
EST #H86017

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM

MONITORING WELL CONSTRUCTION PERMIT

SITE NAME: POWAY LANDFILL

SITE ADDRESS: OFF-SITE ADJACENT TO 14900POWAY RD. SAN DIEGO CA 92064

PERMIT TO: **INSTALL 22 SOIL VAPOR CLUSTER WELLS**

PERMIT APPROVAL DATE: APRIL 6, 2006

PERMIT EXPIRES ON: AUGUST 4, 2006

RESPONSIBLE PARTY: COUNTY OF SAN DIEGO LANDFILL MGMT.

PERMIT CONDITIONS:

1. Wells must have a **minimum 3-foot concrete surface seal**. The surface seal shall consist of concrete able to withstand the maximum anticipated load without cracking or deteriorating. The concrete should meet Class A specifications of a minimum 4000-pound compressive strength.

2. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

3. Within 60 days of completing work, submit a well construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

4. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 619) 338-2339.

NOTE: **This permit does not constitute approval of a work plan as defined in Section 2722 of Article 11 of C.C.R., Title 23. Work plans are required for all unauthorized release investigations in San Diego County.**

APPROVED BY: _____ DATE: 4/6/06
KEVIN HEATON

NOTIFIED: 4-7-06 VM.

DEH: SAM-9075

COUNTY OF SAN DIEGO

DEPARTMENT OF ENVIRONMENTAL HEALTH
1255 Imperial Avenue, 3rd Floor
San Diego, CA 92101
(619)338-2228

RECEIPT NUMBER: 06-032
Cashier: EGARCIA

APN: 321-200-38-00
DATE ISSUED: 06-APR-2006
PERMIT: LMON 103910
SCOPE: MONITORING WELL/CATHODIC WELL
SITE ADDRESS: 14900 POWAY RD
SUBDIVISION:
CITY: Poway, CA 92064

PARCEL OWNER: COUNTY OF SAN DIEGO
ADDRESS: PUBLIC AGENCY
CITY/STATE/ZIP: , 00000

PERMIT OWNER:
ADDRESS:
CITY/STATE/ZIP:

Fees Calculated 12 Months Back

Date	Fee Code	Description	Paid to Date	This Receipt	Balance Due
06-APR-2006	6LW25-ZCRO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	$0.00	-$18.50	$0.00
06-APR-2006	6LWAM--EHO	ADDITIONAL MONITORING WELL	$0.00	$3,360.00	$0.00
06-APR-2006	6LWAM-ZCRO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	$0.00	-$336.00	$0.00
06-APR-2006	6LWMAIXEHO	ADDITIONAL WELL MAINTENANCE FEE	$0.00	$630.00	$0.00
06-APR-2006	6LWMAIXZCO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	$0.00	-$63.00	$0.00
06-APR-2006	6LWMAINEHO	WELL MAINTENANCE FEE	$0.00	$100.00	$0.00
06-APR-2006	6LWMAINZCO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	$0.00	-$10.00	$0.00
06-APR-2006	6LW25--EHO	MONITORING WELL	$0.00	$185.00	$0.00
		Totals:		$3,847.50	$0.00

Payment Code	Description	Amt
CHECK	1065	$3,847.50

Tendered:	$3,847.50
Change:	$0.00
Balance Due:	$0.00

PERMIT APPLICATION
GROUNDWATER
AND VADOSE MONITORING WELLS
AND EXPLORATORY OR TEST BORINGS

RECEIVED
2006 APR 5 PM 3 51

OFFICE USE ONLY
PERMIT LMON # 103910
SAM CASE Y/N # H86017
DATE RECEIVED: 4-5-06
FEE PAID: $3847.50
CHECK # 1065

A. RESPONSIBLE PARTY County of San Diego, Landfill Management Div. Phone 858-495-5486
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address 5201 Ruffin Rd Ste. D City San Diego State CA Zip 92123
Contact Person Barry Pulver Phone 858-495-5480 Ext. _____ Fax _____

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # _____

C. CONSULTING FIRM GeoSyntec Consultants
Mailing Address 10875 Rancho Bernardo Rd Ste 200 City San Diego State CA Zip 92127
Registered Professional Tom Williams Vern Whiting Registration # 7115 (PG)
Contact Person Sean McClain Phone 858-674-6559 Ext. 211 Fax 858-674-6585

D. DRILLING COMPANY Cascade Drilling California Inc. C57# C57-717510
Contact Name Kurt Magee
Mailing Address 11250 E. Firestone Blvd. City Norwalk State CA Zip 90650-
Phone (562) 929-8176 Fax (562) 863-9354

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	___
☐ Vadose	___
☐ Boring	___
☒ Other soil vapor well cluster	22

NUMBER OF WELLS TO BE DESTROYED

☐ ___

MATERIALS TO BE USED

CASING
Not Applicable _____
Type _____
Gauge _____
Diameter _____
Well Screen Size
Filter Pack _____

SEAL/BORING BACKFILL
☐ Neat Cement
☒ Cement & Bentonite
☐ Sand-Cement
☐ Bentonite
☐ Other
Borehole diameter _____

Drilling Method
☐ Auger ☐ Air Rotary
☐ Mud Rotary ☒ Other Direct Push
☐ Percussion

PROPOSED CONSTRUCTION
Estimated groundwater depth: _____ ft.
Estimated depth of boring _____ ft.

Concrete surface seal	0 to 3 (See Attached Diagrams)
Annular seal	_____ to _____
Bentonite transition seal	_____ to _____
Filter Pack	_____ to _____
Perforation	_____ to _____

NOTE:
Attach a well construction diagram for wells with multiple completions

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE Don Kunbach DATE 4-2-06

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I certify the design and construction or destruction of the well/borings in accordance with the permit application.

PG/RCE SIGNATURE _____ DATE 4-3-06

F. SITE INFORMATION

1. **ASSESSOR'S PARCEL NUMBER Next to 321-200-38** City of Poway right-of-ways (See Figure 2)

   Site Name: Poway Landfill

   Site Address: 14900 Poway Road City: San Diego Zip: 92064

   PROPERTY OWNER: County of San Diego

   Phone 858-495-5480 Ext. _____ Fax _____

   Mailing Address: 5201 Ruffin Road Suite D City: San Diego State: CA Zip 92123

   NUMBER OF WELLS 22 TYPE OF WELLS Soil Vapor Wells

2. **ASSESSOR'S PARCEL NUMBER** _____

   Site Name _____

   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____

   Phone _____ Ext. _____ Fax _____

   Mailing Address _____ City _____ State _____ Zip _____

   NUMBER OF WELLS_____ **TYPE OF WELLS** _____

3. **ASSESSOR'S PARCEL NUMBER** _____

   Site Name _____

   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____

   Phone _____ Ext. _____ Fax _____

   Mailing Address _____ City _____ State _____ Zip _____

   NUMBER OF WELLS_____ **TYPE OF WELLS** _____

4. **ASSESSOR'S PARCEL NUMBER** _____

   Site Name _____

   Site Address _____ City _____ Zip _____

   PROPERTY OWNER _____

   Phone _____ Ext. _____ Fax _____

   Mailing Address _____ City _____ State _____ Zip _____

   NUMBER OF WELLS_____ **TYPE OF WELLS** _____

Permit Fees In Effect for July 1, 2005 - June 30, 2006

G. FEES (in effect beginning July 1, 2005, through June 30, 2006)

The County Board of Supervisors authorized a *10% credit, for the Fiscal Year ending June 30, 2006,* to be applied to the Department of Environmental Health customers. This credit is being provided to qualified fee-based programs that have contributed to the cost reduction/cost containment/cost avoidance efforts initiated by the Department. This *fee adjustment, for the Fiscal Year ending June 30, 2006,* is applicable to fees and permits due and/or obtained during this period. The 10% is not applicable to enforcement fees or fees relating to non-compliance of permit regulations.

ACTIVITY	FEE SCHEDULE FEE -- ONE-TIME FISCAL YEAR 10% CREDIT	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	$185.00 for the first monitoring well $185.00 – 10% <$18.50> =	1 x $166.50 $ 166.50
Permit for Well Maintenance Inspection (Valid for three years)	$100.00 for first well maintenance inspection $100.00 – 10% <$10.00> =	1 x $ 90.00 $ 90.00
Each Additional New Well	$160.00 for each additional well installation $160.00 – 10% <$16.00> = $ 30.00 for each additional well maintenance inspection $ 30.00 – 10% <$ 3.00> =	21 x $144.00 $ 3024.00 21 x $ 27.00 $ 567.00
Permit for Borings Only *(CPT's, Hydropunch, Geoprobes,* Temporary Well Points, etc.)	$185.00 for the first boring $185.00 – 10% <$18.50> = $ 50.00 for each additional boring $ 50.00 – 10% <$ 5.00> =	1 x $166.50 $_____ _____ x $ 45.00 $_____
Permit for Well Destructions Only	$185.00 for the first destruction $185.00 – 10% <$18.50> = $120.00 for each additional destruction $120.00 – 10% <$12.00> =	1 x $166.50 $_____ _____ x $108.00 $_____
Permit for any Combination of Well Installations, Borings, & Destructions *(except UST backfill permit)* **Permit for any Combination of Well Installations, Borings, & Destructions *(except UST backfill permit)***	**The first activity will be $185.00.** **$185.00 – 10% <$18.50> =** **Additional activities will be as follows:** **$160.00 for each additional well** **$160.00 – 10% <$16.00> =** **$100.00 for first well maintenance inspection** **$100.00 – 10% <$10.00> =** **$ 30.00 for each additional well maintenance inspection** **$ 30.00 – 10% <$ 3.00> =** **$ 50.00 for each additional boring** **$ 50.00 – 10% <$ 5.00> =** **$120.00 for each well destruction** **$120.00 – 10% <$12.00> =**	1 x $166.50 $_____ _____ x $144.00 $_____ 1 x $ 90.00$_____ _____ x $ 27.00 $_____ _____ x $ 45.00 $_____ _____ x $108.00 $_____
	TOTAL COST OF PERMIT	$ 3847.50
Permit for Underground Storage Tank Monitoring System in Backfill *(i.e. Enhanced Leak Detection)*	(Flat Fee) $320.00 – 10% <$32.00> =	$288.00

H. **QUESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.**

1. If wells are to be destroyed, provide a description of method of destruction NA

2. What is the purpose of the well/boring investigation?

   ☒ a. Part of an ongoing site assessment case in which DEH or another government regulator is the lead agency.

   ☐ b. Part of a Phase I investigation for property ownership transfer or: _____

   ☐ c. Geotechnical investigation for proposed construction, land stabilization or:

   ☐ d. Other: _____

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? The vapor wells will be installed imediately after the borings are completed

4. What field procedures will be utilized to determine if contamination exists? The cuttings will be screened with a photoionization detector (PID) and a composite sample from the cuttings will be submitted to an analytical laboratory for analysis

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? Soil Vapor samples will be submitted to an analytical laboratory

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? VOCs EPA Method TO-15 and Fixed Gases

7. How will samples be transported and preserved? Soil Vapor samples will be Fed-Ex to lab (No perservative).

8. What sampling methods will be used? Soil cuttings will be stored in 55-gallon drums and one composite soil sample will be collected from all drums.

9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www/sdcounty.ca.gov/deh/lwq/sam/monitoring_well.html). :yes, see attached diagram per discussion with Kevin Heaton

10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. No

11. What procedures will be used to ensure that the drilling equipment will introduce no contamination? Drilling equipment will be steamed cleaned prior to drilling onsite

12. What methods will be used to clean sampling equipment? New sampling tubbing will be used at each vapor well location

13. What cleaning method will be used to clean casing and screen prior to installation? New tubing will be used which will arrive onsite pre-wrapped

ROW NO. 06-38

CITY OF POWAY

PUBLIC RIGHT-OF-WAY PERMIT

Associated Plan No. ______
Contact Person Sean McClain
Address ______

APPLICANT PLEASE FILL OUT NUMBERED ITEMS 1-4:

Phone No. 858-674-6659 ex 211 6559

1. APPLICANT, GeoSyntec Consultants, hereby requests permission to work in the following streets or other public easements (provide owner, address, and property description): See Attachment

2. TO INSTALL (provide type of installation and approximate dimensions, length, width, and depth): 22 Soil Vapor wells (See well diagrams) Located Approximately 4 Feet from Curb in City right-of-way.

3. X PRIVATE DEVELOPMENT ___ SOUTH POWAY ___ CITY PROJECT

4. Contractor GeoSyntec Consultants Subcontractors Vironex

Job superintendent Veryl Wittig License No. # 7115

Address 10875 Rancho Bernardo Road Suite 200

Contractor's License No. 705927 Type of License C-57

APPLICANT MUST SUBMIT THE FOLLOWING WITH THE APPLICATION:

1. Copy of the Contractor's license (Type A required).
2. Certificate of insurance for worker's compensation and general liability in the amount of $1 million naming the City as an additional insured.
3. Detailed and scaled traffic control plan for all phases of work.
4. Detailed construction schedule and clear description of work.
5. Itemized cost estimate (unless fees were previously paid with an approved plan listed above).
6. All applicable fees and deposits.

PRE-APPROVED
NOT FOR CONSTRUCTION
PENDING PRE-CONSTRUCTION MEETING

NOTE: Application will not be accepted unless items 1-6 are provided. In some cases, the City will consider a waiver of a part of the requirements of items 1-3 with submittal of a waiver request.

Hours of work 8:30 - 3:30 (8:30 a.m. and 3:30 p.m. unless otherwise specified).

Contractor must call Underground Service Alert at 1-800-422-4133 to have utilities marked out before the preconstruction meeting. After approval of permit, the City Inspector will contact the contractor and set up a time for a pre-construction meeting. City inspector must have a minimum of 48-hours notification prior to scheduling of pre-construction meeting and construction. Location of all utility cabinets or structures are subject to review, and may require an MDRA to be processed through Development Services Department, Planning division.

In consideration of the granting of this application, the permittee agrees to, and by this instrument, does hold the City of Poway, its elective and appointed officials, officers, agents, and employees harmless from any liability for claims for work done and material furnished upon the property, or any improvements made on the property covered by this permit. Permittee further agrees to hold and save harmless from any claim, cause of action, liability or responsibility for any accident, loss or damage to persons or property caused by the negligence of the Permittee, secured by the submitted certificate of insurance, arising out of the work undertaken pursuant to this permit, or any other permits that may be granted pursuant thereto. **I, the applicant, have read and understand the front and back of this application and will abide by its rules and regulations.**

Signature of Applicant Sean McClain Date 3-16-06

Approved Carl R Hutema Date 3/27/06
Traffic Engineer

Kenneth W. [signature] Date 3/27/06
Senior Civil Engineer

PERMIT VALID UNTIL: June 15, 2006

Inspector Don Sharp Date 3/28/06

APPROVED EXTENSION DATE ______ By:

GeoSyntec Consultants

Proposed Soil Vapor Well Cluster Construction

Poway Landfill

Well ID: Soil Vapor Well Cluster

Drilling Company:

Drillers:

Geologist: Sean McClain

Date: 3/15/06

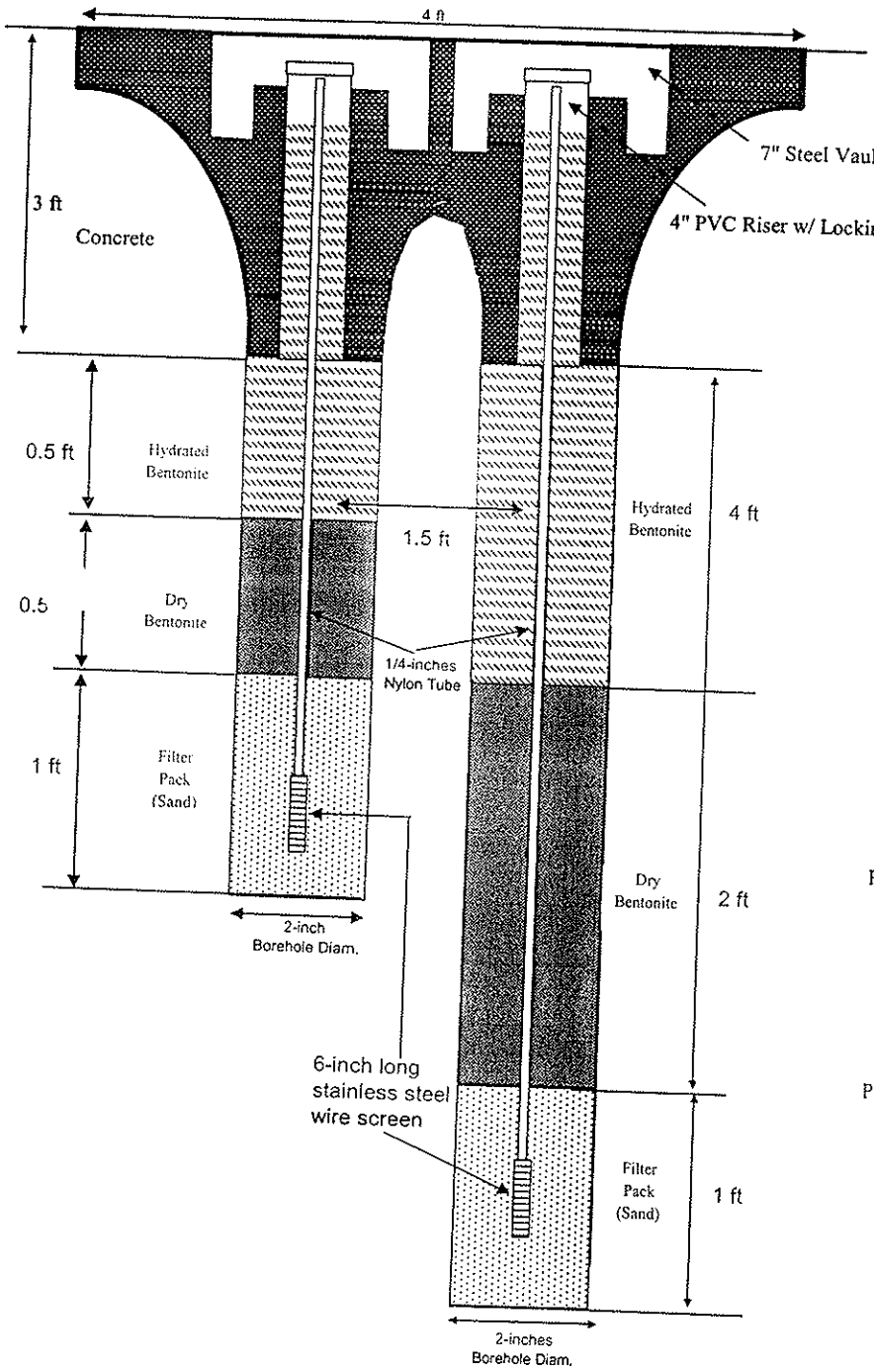
Drilling Method: Direct Push

Proposed Boring Depth: 5-10 feet bgs

Proposed Boring Diam: 2-inches

Proposed Well Depth: 5-10 feet bgs

Well Diameter: 2 Vapor well cluster, each
1/4 -inches diameter



Proposed Well Construction:

Material: 1/4 " nylon tubing

Inside Diamter:

Proposed Filter Pack:

Type/Brand: Sand

Amount Used: 6" above & 6" below

Placement Method: Tremie

Proposed Seal: &

Type/Brand: Granular Bentonite

Amount Used: 0.5, - 2' dry; 0.5' - 4, hydrated above

Vol. Fluid Added:

Set-up Time:

Placement Method: Tremmie

Proposed Grout:

Type/Brand: Concrete

Amount Used:

Vol. Fluid Added:

Placement Method:

Proposed Well Completion:

Above Grade / Below Grade / **Flush Mounted**

Guard Posts? Y / N

Pad Size: 4X3

Cover Type/Size: 7-inch steel Flush Mount

Comments:

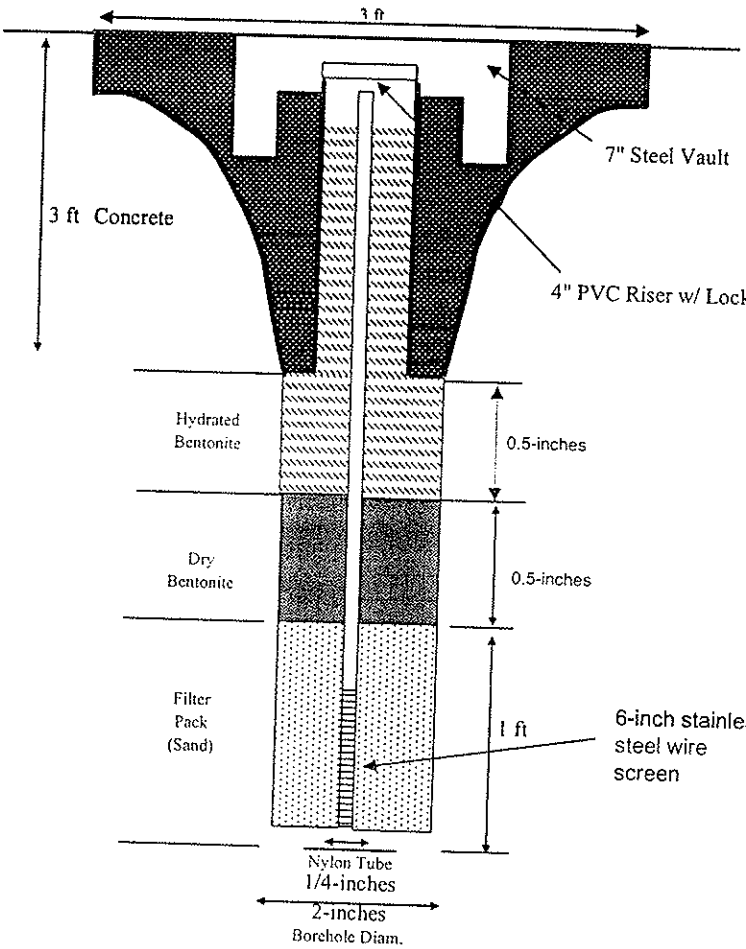
Geologist Signature:

GeoSyntec Consultants

Proposed Single Soil Vapor Well Construction

Site: Poway Landfill
Well ID: Single Soil Vapor Well
Drilling Company:
Drillers:
Geologist: Sean McClain

Date: 3/10/06
Drilling Method: Direct Push
Proposed Boring Depth: 5 feet bgs
Proposed Boring Diameter: 2-inches
Proposed Well Depth: 5 feet bgs
Well Diameter: 1/4 -inches diameter



Proposed Well Construction:

Material: 1/4 " nylon tubing
Inside Diamter:

Proposed Filter Pack:
Type/Brand: Sand
Amount Used: 1 ft
Placement Method: Tremie

Proposed Seal:
Type/Brand: Granualar Bentonite
Amount Used: 0.5" dry and 0.5" hydrated
Vol. Fluid Added:
Set-up Time:
Placement Method: Tremmie

Proposed Grout:
Type/Brand: Concrete
Amount Used:
Vol. Fluid Added:
Placement Method:

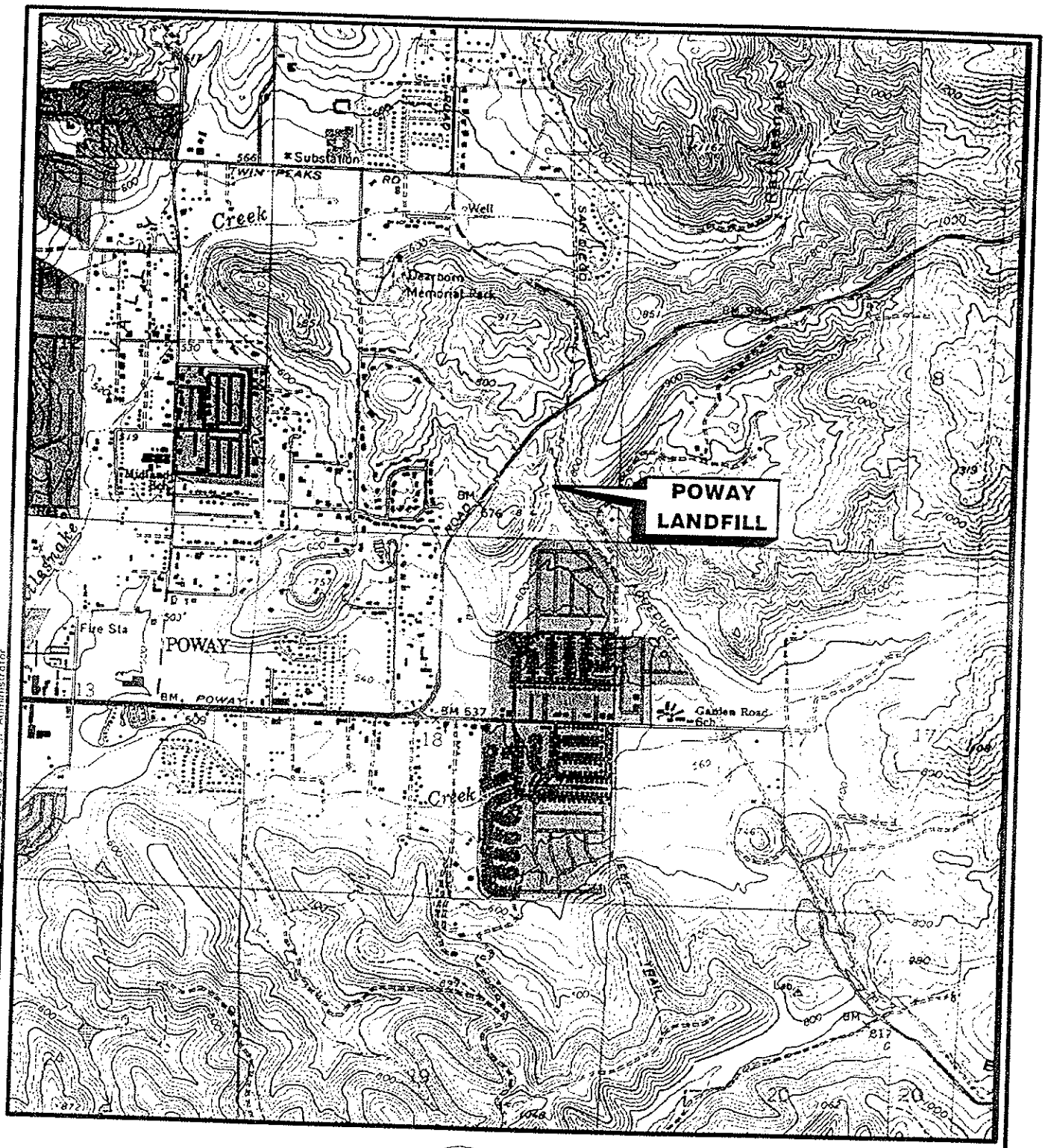
Proposed Well Completion:

Above Grade / Below Grade / **Flush Mounted**

Guard Posts? Y / N

Pad Size: 3X3
Cover Type/Size: 7-inch steel Flush Mount
Comments:

Geologist Signature:



SOURCE:
NATIONAL GEOGRAPHIC (CALIFORNIA)
SEAMLESS USGS TOPOGRAPHIC MAPS ON CD-ROM
POWERED BY TOPO

GeoSyntec Consultants

SITE LOCATION
POWAY LANDFILL
POWAY, CALIFORNIA

FIGURE NO.	1
PROJECT NO.	SC0233
DATE:	DECEMBER 2005

d:\CADD\SC0233\05-05-\PP-NEW-TASK\SC0233_05-05_SL-FIG 1.dwg 12/22/05 14:51 Administrator

P:\PRJ

ROW NO. 06-09

CITY OF POWAY

PUBLIC RIGHT-OF-WAY PERMIT

Associated Plan No. See Attachment Location Map

Contact Person Sean McClain

Address 11555 Rancho Bernardo Rd Ste 101
San Diego CA

APPLICANT PLEASE FILL OUT NUMBERED ITEMS 1-4:

Phone No. (858) 674-6559

1. APPLICANT, GeoSyntec Consultants, hereby requests permission to work in the following streets or other public easements (provide owner, address, and property description):
Property adjacent to Southwest corner of Poway Landfill (Parcel No. 323-461-25)

2. TO INSTALL (provide type of installation and approximate dimensions, length, width, and depth):
One groundwater monitor well: 6" boring to approximately 75' depth with [illegible]

3. X **PRIVATE DEVELOPMENT** ___ **SOUTH POWAY** ___ **CITY PROJECT**

4. Contractor Tri-County Drilling Subcontractors None

Job superintendent Dave Maske License No. 547737

Address 9631 Candida Street San Diego CA 92126

Contractor's License No. ______ Type of License C57

APPLICANT MUST SUBMIT THE FOLLOWING WITH THE APPLICATION:

1. Copy of the Contractor's license (Type A required).
2. Certificate of insurance for worker's compensation and general liability in the amount of $1 million naming the City as an additional insured.
3. Detailed and scaled traffic control plan for all phases of work.
4. Detailed construction schedule and clear description of work.
5. Itemized cost estimate (unless fees were previously paid with an approved plan listed above).
6. All applicable fees and deposits.

NOT FOR CONSTRUCTION
PRE-APPROVED
PENDING PRE-CONSTRUCTION MEETING

NOTE: Application will not be accepted unless items 1-6 are provided. In some cases, the City will consider a waiver of a part of the requirements of items 1-3 with submittal of a waiver request.

Hours of work [illegible] (8:30 a.m. and 3:30 p.m. unless otherwise specified).

[illegible]

Contractor must call Underground Service Alert at 1-800-422-4133 to have utilities marked out before the preconstruction meeting. After approval of permit, the City Inspector will contact the contractor and set up a time for a pre-construction meeting. City inspector must have a minimum of 48-hours notification prior to scheduling of pre-construction meeting and construction. Location of all utility cabinets or structures are subject to review, and may require an MDRA to be processed through Development Services Department, Planning division.

In consideration of the granting of this application, the permittee agrees to, and by this instrument, does hold the City of Poway, its elective and appointed officials, officers, agents, and employees harmless from any liability for claims for work done and material furnished upon the property, or any improvements made on the property covered by this permit. Permittee further agrees to hold and save harmless from any claim, cause of action, liability or responsibility for any accident, loss or damage to persons or property caused by the negligence of the Permittee, secured by the submitted certificate of insurance, arising out of the work undertaken pursuant to this permit, or any other permits that may be granted pursuant thereto. **I, the applicant, have read and understand the front and back of this application and will abide by its rules and regulations.**

Signature of Applicant Sean McClain Date 1-12-06

Approved Carl R. Chilson Date 1/18/06
Traffic Engineer

[illegible] Date 2/1/06
Senior Civil Engineer

PERMIT VALID UNTIL: Sept 3 2006

Inspector [illegible] Date 2/10/06

APPROVED EXTENSION DATE ______ By: ______

CITY OF POWAY
DEVELOPMENT SERVICES DEPARTMENT

REQUEST FOR WAIVER OF RIGHT-OF-WAY PERMIT SUBMITTAL REQUIREMENTS

Right-of-Way Permit No. 06-09

Applicant GeoSyntec Consultants Date 1-17-06

Address 11305 Rancho Bernardo Rd ste 101

San Diego, CA 92127

Telephone No(s). 858-674-6559 ex. 203

☒ Private development project ☐ City Capital Improvement project

Description of work to be done: Install monitor well.

Waiver requested: Type A Contractors License waived to C-57 license

(X) NO T.C. PLAN IS REQ. CLA 1/19/06

Justification: Drillers are only required to carry C-57

NO WORK ON STREET

FOR OFFICE USE ONLY

Approval date 1/23/06

Senior Engineer Kenneth W. Dorn

(X) Comments ROUTE 2 IS TO BE USED FOR ACCESS.

ROUTE 1 IS NOT TO BE USED.

M:\engserv\eng forms\Land Development forms\Request for waiver .doc

State Of California
CONTRACTORS STATE LICENSE BOARD
ACTIVE LICENSE

Consumer Affairs

License Number 547737 Entity CORP

Business Name TRI-COUNTY DRILLING INC

Classification(s) C57

Expiration Date 11/30/2006

License Detail CALIFORNIA CONTRACTORS STATE LICEN
Contractor License # 547737

DISCLAIMER

A license status check provides information taken from the CSLB license data base. Before on this information, you should be aware of the following limitations:

- CSLB complaint disclosure is restricted by law (B&P 7124.6). If this entity is subject to complaint disclosure, a link for complaint disclosure will appear below. Click on the lin button to obtain complaint and/or legal action information.
- Per B&P 7071.17, only construction related civil judgments reported to the CSLB are disclosed.
- Arbitrations are not listed unless the contractor fails to comply with the terms of the arbitration.
- Due to workload, there may be relevant information that has not yet been entered ont Board's license data base.

Extract Date: **01/18/2006**

* * * Business Information * * *

TRI-COUNTY DRILLING INC
9631 CANDIDA STREET
SAN DIEGO, CA 92126
Business Phone Number: (858) 271-0099

Entity: **Corporation**
Issue Date: **11/12/1988** Expire Date: **11/30/2006**

* * * License Status * * *

This license is current and active. **All information below should be reviewed.**

* * * Additional Status Information * * *

The license may be suspended on 02/08/2006 if the workers' compensation insurance polic filed with the CSLB.

* * * Classifications * * *

Class	Description
C57	WELL DRILLING (WATER)

* * * Bonding Information * * *

CONTRACTOR'S BOND: This license filed Contractor's Bond number **6945837** in the am
$10,000 with the bonding company
WESTERN SURETY COMPANY.
Effective Date: **01/01/2004**

Contractor's Bonding History

BOND OF QUALIFYING INDIVIDUAL(1): The Responsible Managing Officer (RMO) SH
MARIE PETERSON certified that he/she owns 10 percent or more of the voting stock/equi
corporation. A bond of qualifying individual is **not** required.
Effective Date: **01/25/1994**

* * * Workers Compensation Information * * *

This license has workers compensation insurance with the
STATE COMPENSATION INSURANCE FUND
Policy Number: **059-0000346** Effective Date: **06/01/1998** Cancellation Date: **01/01/20**

Workers Compensation History

Personnel List

License Number Request | Contractor Name Request | Personnel Name Request

Salesperson Request | Salesperson Name Request

POLICY NUMBER: GL 4178618

COMMERCIAL GENERAL LIABILITY
CG 20 10 07 04

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – SCHEDULED PERSON OR ORGANIZATION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name Of Additional Insured Person(s) Or Organization(s):	Location(s) Of Covered Operations
City of Poway 13325 Civic Center Drive Poway, CA 92064	
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.	

A. **Section II – Who Is An Insured** is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:

1. Your acts or omissions; or
2. The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured(s) at the location(s) designated above.

B. With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to "bodily injury" or "property damage" occurring after:

1. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or
2. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

City of Poway

Printed Date 2/7/2006 5:40:16 PM

Insurance Certification Record

Department: Development Services

Insured	Geosyntec Consultants, inc
Job or Project	ROW Permit
Contact	Pat Phelps
Contract No.	05-038, 06-009

Approved

General Liability	☑	9/1/2006	*Professional Liability*	☑	9/1/2006
Auto Liability	☑	9/1/2006	*Wkrs Compensation*	☑	9/1/2006
Excess Liability	☑	9/1/2006	*Misc. Liability*	☐	
Endorsement	☐	General	*Renewal Needed*	☑	

Notes

ENDORSEMENT NO. 05

This endorsement, effective 12:01 AM,	03/22/05
Forms a part of Policy No:	GL 417-86-18
Issued to:	Geosyntec Consultants, Inc.
By:	Commerce & Industry Insurance Company

It is hereby agreed that the following form is added as respects to form CG 20 10 (07 04) attached:

Additional Insured – Owners, Lessees or Contractors – Scheduled Person or Organization.

All other terms, conditions, and exclusions shall remain the same.

Authorized Representative

MARSH — CERTIFICATE OF INSURANCE

CERTIFICATE NUMBER: ATL-000632666-06

PRODUCER

Marsh USA Inc.
1560 SAWGRASS CORPORATE PKWY.
SUITE 300
SUNRISE, FL 33345-9010
Attn: WILLIAM BARROWS FtLauderdale.certs@marsh.com

S81127-ALL-CAS2-04-05 BOCAR ALL4

INSURED

GEOSYNTEC CONSULTANTS, INC.
5901 BROKEN SOUND PARKWAY NW, SUITE 300
BOCA RATON, FL 33487-2775

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER OTHER THAN THOSE PROVIDED IN THE POLICY. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES DESCRIBED HEREIN.

COMPANIES AFFORDING COVERAGE

COMPANY A — COMMERCE AND INDUSTRY INSURANCE COMPANY
COMPANY B — AMERICAN INTERNATIONAL SPECIALTY LINES
COMPANY C — INSURANCE COMPANY STATE OF PENNSYLVANIA
COMPANY D —

COVERAGES — This certificate supersedes and replaces any previously issued certificate for the policy period noted below.

THIS IS TO CERTIFY THAT POLICIES OF INSURANCE DESCRIBED HEREIN HAVE BEEN ISSUED TO THE INSURED NAMED HEREIN FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THE CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, CONDITIONS AND EXCLUSIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
A	GENERAL LIABILITY	GL4178618	09/01/04	09/01/05	GENERAL AGGREGATE	$ 2,000,000
	[X] COMMERCIAL GENERAL LIABILITY				PRODUCTS - COMP/OP AGG	$ 2,000,000
	[ ] CLAIMS MADE [X] OCCUR				PERSONAL & ADV INJURY	$ 1,000,000
	[ ] OWNER'S & CONTRACTOR'S PROT				EACH OCCURRENCE	$ 1,000,000
	[X] SIR: 100,000				FIRE DAMAGE (Any one fire)	$ 100,000
					MED EXP (Any one person)	$ 25,000
A	AUTOMOBILE LIABILITY	CA5053937 (AOS)	09/01/04	09/01/05	COMBINED SINGLE LIMIT	$ 1,000,000
A	[X] ANY AUTO	CA1955450 (TX)	09/01/04	09/01/05		
A	[ ] ALL OWNED AUTOS	CA1955451 (MA)	09/01/04	09/01/05	BODILY INJURY (Per person)	$
	[ ] SCHEDULED AUTOS					
	[X] HIRED AUTOS				BODILY INJURY (Per accident)	$
	[X] NON-OWNED AUTOS					
					PROPERTY DAMAGE	$
	GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT	$
	[ ] ANY AUTO				OTHER THAN AUTO ONLY:	
					EACH ACCIDENT	$
					AGGREGATE	$
B	EXCESS LIABILITY	BE8085625	09/01/04	09/01/05	EACH OCCURRENCE	$ 10,000,000
	[X] UMBRELLA FORM				AGGREGATE	$ 10,000,000
	[ ] OTHER THAN UMBRELLA FORM				SIR:	$ 10,000
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	9682856 (AOS)	09/01/04	09/01/05	[X] WC STATUTORY LIMITS [ ] OTHER	
A		9682857 (CA)	09/01/04	09/01/05	EL EACH ACCIDENT	$ 1,000,000
C	THE PROPRIETOR/ PARTNERS/EXECUTIVE OFFICERS ARE: [X] INCL [ ] EXCL	WC9682858 (NJ)	09/01/04	09/01/05	EL DISEASE-POLICY LIMIT	$ 1,000,000
					EL DISEASE-EACH EMPLOYEE	$ 1,000,000
B	OTHER Prof. Liability & Contr. Poll. Liab. Claims Made Form	195-19-04	09/01/04	09/01/05	Each Claim / Aggregate SIR: Each Claim Incl. Prod. & Completed Ops	5,000,000 300,000

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS

CITY OF POWAY IS INCLUDED AS AN ADDITIONAL INSURED EXCEPT FOR WORKERS' COMPENSATION.

CERTIFICATE HOLDER

CITY OF POWAY
13325 CIVIC CENTER DRIVE
POWAY, CA 92064

CANCELLATION

SHOULD ANY OF THE POLICIES DESCRIBED HEREIN BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE INSURER AFFORDING COVERAGE WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED HEREIN, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER AFFORDING COVERAGE, ITS AGENTS OR REPRESENTATIVES, OR THE ISSUER OF THIS CERTIFICATE.

MARSH USA INC.
BY: Frances Sigurani — Frances Sigurani

IMM (6/02) — VALID AS OF: 03/09/05

A $2000.00 deposit was paid back to GeoSyntec Consultants from the City of Poway for a previous well installation. (Check # 176685) We are applying for A City right of way permit for A new well installation. The cost of this permit is $1350.00. GeoSyntec would like to apply the City of Poway's Check to the new permit leaving a balance of $650.00 owed to GeoSyntec Can the $650.00 be paid back to GeoSyntec with the $1000.00 deposit at the conclusion of work.

Sean McClain

GeoSyntec

$2000.00 City Check accepted as payment.

Scott Nash

RECEIVED

JAN 17 2006

CITY OF POWAY
DEVELOPMENT SERVICES

DEPARTMENT OF DEVELOPMENT SERVICES

RECEIPT OF FEES FOR LAND DEVELOPMENT ACTIVITIES

Project Name: Monitoring Wells Developer: GeoSyntec Consultants

Address: Poway Landfill Project No: 06-09

City ROW

Check No.: 00147563 Received By: SAV Date: 1/12/06

ACTIVITY	ACCOUNT	FEES PAID
Boundary Adjustment ($1,000/Application)	100-305-7735	
Certificate of Compliance ($1,000/Application)	100-305-7735	
Certificate of Correction ($100/Fee)		
Drainage Fee (See Schedule)	232-305-7712	
Easement Dedication ($1,000/Application)	100-305-7735	
Final/Parcel Map Plan Fee ($1,000 Sheet)	100-305-7735	
Grading Permit Fee ($100/Permit)	100-305-7235	
Grading Plan Check Fee (See Schedule)	100-305-7735	
Improvement Plan Administrative Fee ($100 Sheet)	100-305-7735	
Improvement Plan Check Fee (See Schedule)	100-305-7735	
Inspection Fee (See Schedule)	100-306-7737	$300-
Merger ($800/Application)	100-305-7735	
Minor Development Review ($500/Lot)	100-306-7737	
Miscellaneous (CIP Plans, Blueprints, Photocopies, etc.)	100-305-7736	
Park Fee (See Schedule)	411-305-7630	
Reimbursement Agreement ($1,000 + 1% Total Reimbursement Amount)	100-305-7888	
Right-of-Way Permit or Blasting Permit ($50/Permit)(See Schedule)	100-305-7234	~~$50~~ $50-
SEWER		
Clean Out Box ($50/Box)	520-305-7683	
Clean Out Inspection Fee ($25/Connection)	520-403-7685	
Line Charge/Indirect Benefit Fee (See Schedule)	520-305-7683	
Sewer Connection Fee (See Schedule)	520-305-7683	
Temporary Sewer Connection ($500/Application)	520-305-7613	
Soils Report Review (See Schedule)	100-305-7735	
Street Light Annexation Fee (See Schedule)	275-305-7711	
Traffic Mitigation Fee (See Schedule)	222-305-7713	
Vacation ($1,500 or $2,500/Application)	100-305-7735	
WATER		
Temporary Water connection ($500/Application)	510-305-7613	
Unmetered Landscape Water/Construction Water (See Schedule)	510-400-7642	
Water Authority Fee (See Schedule) PAID BY SEPARATE CHECK	510-305-7668	
Water Base Capacity Fee (See Schedule)	510-305-7667	
Water Lateral (See Schedule)	510-305-7669	
Water Meter/Backflow Prevention Device (See Schedule)	510-305-7669	
Water System Analysis (See Schedule)	100-305-7612	
Stormwater Pollution Prevention Plan Check Fee	100-305-7735	
Stormwater Pollution Prevention Inspection Fee	100-306-7737	
TOTAL		$350-

M:\engserv\eng forms\Land Development forms\Receipt of Fees for Dev Svcs.doc

13325 Civic Center Drive, Poway, CA 92064-5755 (858) 668-4600

City of Poway, P.O. Box 789, Poway, California 92074-0789

176689

00147563

Union Bank
Poway Branch
Poway, CA
32-391/1220

Check Date 12/30/05

Warrant Amount $*****2,000.00

*****Two Thousand & 00/100*****

PAY TO THE ORDER OF

GeoSyntec Consultants, Inc.
11305 Rancho Bernardo Rd #107
San Diego CA 92127

This Check Void After 180 Days

WARNING: IRREGULAR

CITY OF POWAY
P.O. BOX 789
POWAY, CA 92074

DEVELOPER DEPOSIT AND SECURITIES ADVICE FORM

DP NUMBER ______
DATE ______
INITIAL ______

PROJECT NO./REFERENCE NO. ROW 06-09

ACCOUNT REFERENCE NO. 761- 8603 - 7895 - 7000

NAME GeoSyntec Consultants

TRANSACTION REQUESTED (Check box)

- ☐ CHARGES INCURRED
- ☐ CORRECTION
- ☐ INVOICE PAID
- ☐ REQUEST INVOICE (Complete the following)
- ☐ ADDITIONAL RECEIPT
- ☐ LOW BALANCE (Printout attached)
- ☐ INITIAL DEPOSIT (Complete the following)
- ☐ REFUND
- ☐ OTHER ______

NAME OF PROJECT ______

DEVELOPER'S NAME GeoSyntec Consultants

DEVELOPER'S ADDRESS 11305 Rancho Bernardo Rd #101

ACTIVITY

CATEGORY	ACCOUNT NUMBER	AMOUNT RECEIVED
Grading Plan Check	5910	
Grading Inspection	5920	
Final Map Check	5930	
Improvement Plan Check	5940	
Improvement Inspection	5950	
Boundary Adjustment	5960	
Miscellaneous	5970	
Security Deposit	5980	$1,000 —
Landscape Deposit		
(Additional Deposit received)	5970	$650 —
TOTAL		$1650 —

COMMENTS

*Initial Deposit

PREPARED BY S. Nespor DATE 1/17/06

City of Poway, P.O. Box 789, Poway, California 92074-0789

00147563

176689

Union Bank
Poway Branch
Poway, CA
16-49/1220

Check Date 12/30/05

Warrant Amount $*****2,000.00

*****Two Thousand & 00/100***

PAY TO THE ORDER OF

GeoSyntec Consultants, Inc.
11305 Rancho Bernardo Rd #107
San Diego CA 92127

AUTHORIZED SIGNATURES

WARNING: IF YOU SUSPECT THIS CHECK, VERIFY AUTHENTICITY BY RUBBING BORDER TO OBSERVE COLOR CHANGE.

This Check Void After 180 Days

⑈00147563⑈ ⑆122000496⑆ 2200011887⑈

MAP 12954

GEOSYNTEC CONSULTANTS

11305 Rancho Bernardo Road, Suite 101
San Diego, California 92127 • USA
Tel. (858) 674-6559 • Fax (858) 674-6586

17 January 2006

City of Poway
Planning Department
13325 Civic Center Drive
Poway, CA 92064

Subject: Supplemental Information for Right-Of-Way Permit
Poway Landfill
Poway, California

GeoSyntec Consultants (GeoSyntec) is a subcontractor to the County of San Diego, Department of Public Works, Landfill Management (the County) for groundwater monitoring activities associated with the Poway Landfill (site). The site is located on the south side of Poway Road at 14900 Poway Road in the City of Poway (Figure 1). GeoSyntec is currently performing a study to evaluate groundwater condition downgradient of the site. The study involves the installation of one monitor well on City property (Parcel No. 323-461-25) west of the site (Figure 2).

Monitor Wells

At least 48 hours prior to commencing work at the site, GeoSyntec will mark the proposed drilling location and contact Underground Service Alert (USA) to identify the locations of underground utilities. In addition, GeoSyntec will subcontract Subsurface Surveys, Inc. to perform a geophysical survey of the proposed drilling location to ascertain the location of utilities and other potential subsurface obstructions to the proposed work.

One groundwater monitor well will be installed on vacant property adjacent to the southwest corner of the site (parcel number 323-461-25) owned by the City of Poway (Figure 2). Two routes are available to mobilize equipment to access this drilling location. Route 1, the equipment would drive up through the City easement accessed off ALORA street (Figure3). Route 2, the equipment would access the drilling location cross the property adjacent to the west property boundary of the site. The preferred route to access the drilling location is Route 1. Route 2 would require a property owner access agreement which could delay the project for some time. A 6-inch diameter boring will be advanced using an All-Terrain Vehicle (ATV) Air-Rotary drill rig. It is anticipated that the boring will not be advanced greater than 75 feet below ground surface (bgs). However, the actual installation depth will depend on the depth at which groundwater is encountered. The monitor well will be constructed, developed, and sampled according to current Department of Environmental Health (DEH) Site Assessment and Mitigation

17 January 2006

(SAM) manual guidelines (Figure 4). The monitor well will remain within this location until groundwater monitoring is no longer required at the site.

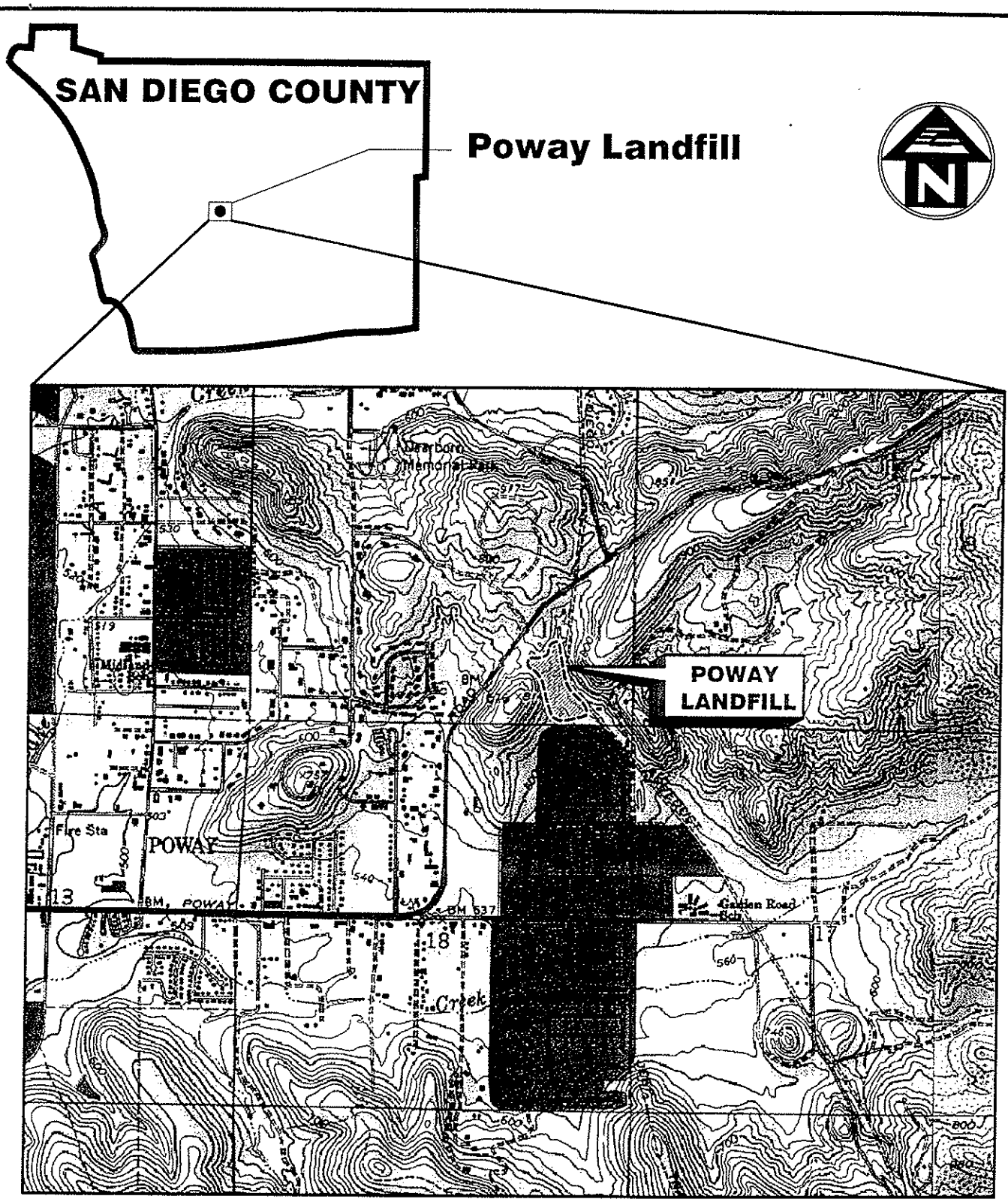
If you have any questions or require additional information, please contact me at (858) 674-6559, **or contact Mr. Barry Pulver at the County at 858-495-5480.**

Sincerely,

Sean McClain
Project Manager

Figures:

Figure 1 Site Location
Figure 2 City Property and Monitor Well Location
Figure 3 Property Access Routes
Figure 4 Department of Environmental Health Typical Monitor Well Construction Diagram



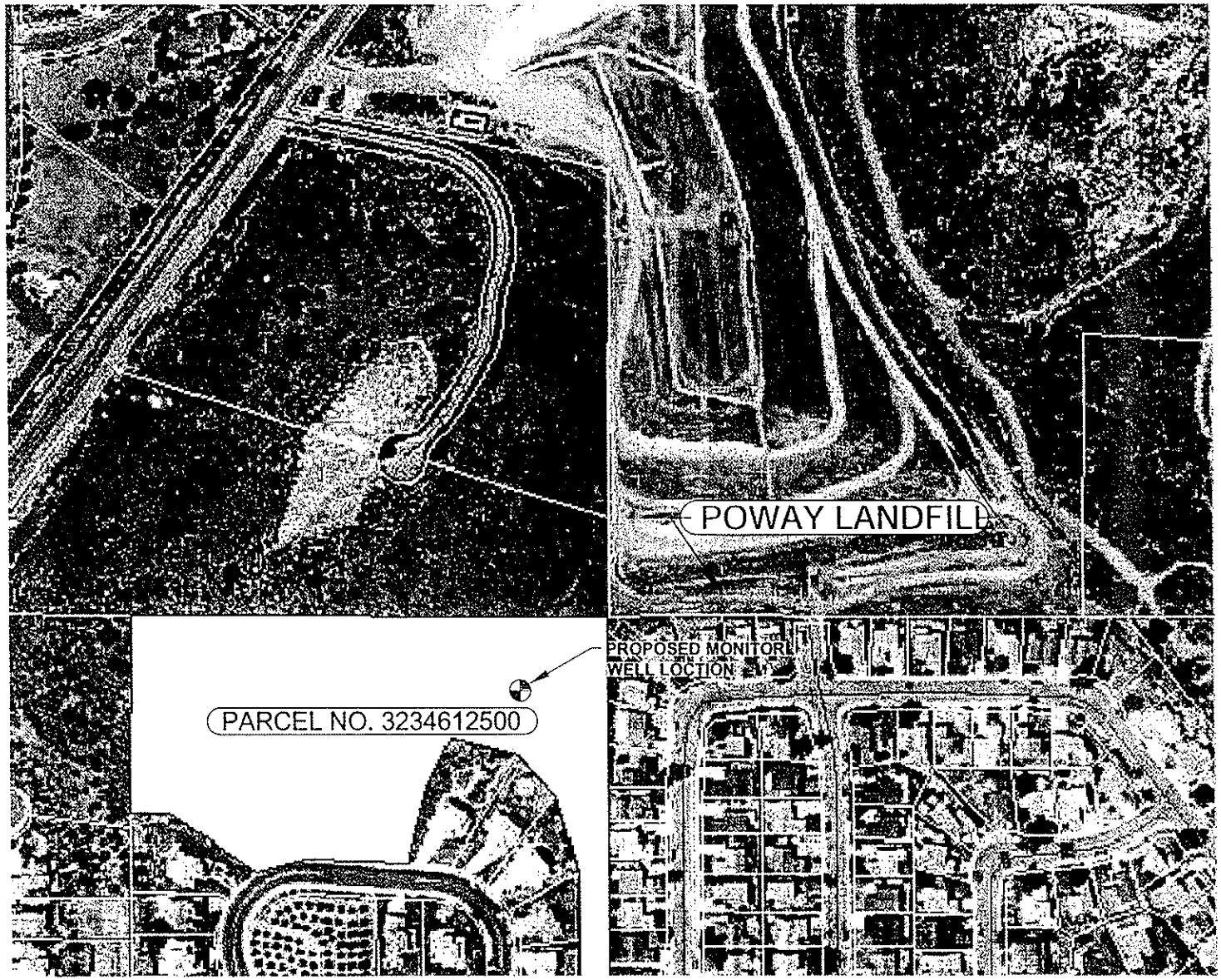
SOURCE:
NATIONAL GEOGRAPHIC (CALIFORNIA)
SEAMLESS USGS TOPOGRAPHIC MAPS ON CD-ROM
POWERED BY TOPO

2,000 1,000 0 2,000 4,000
SCALE IN FEET

GEOSYNTEC CONSULTANTS

SITE LOCATION POWAY LANDFILL POWAY, CALIFORNIA	FIGURE NO. 1 PROJECT NO. SC0233. DATE: JANUARY 2005

P:\PROJ\SDCadd\...\SC0233\FIGS-3\SC0233_SITE_LOC-2.dwg 1/03/06 15:10 Administrator



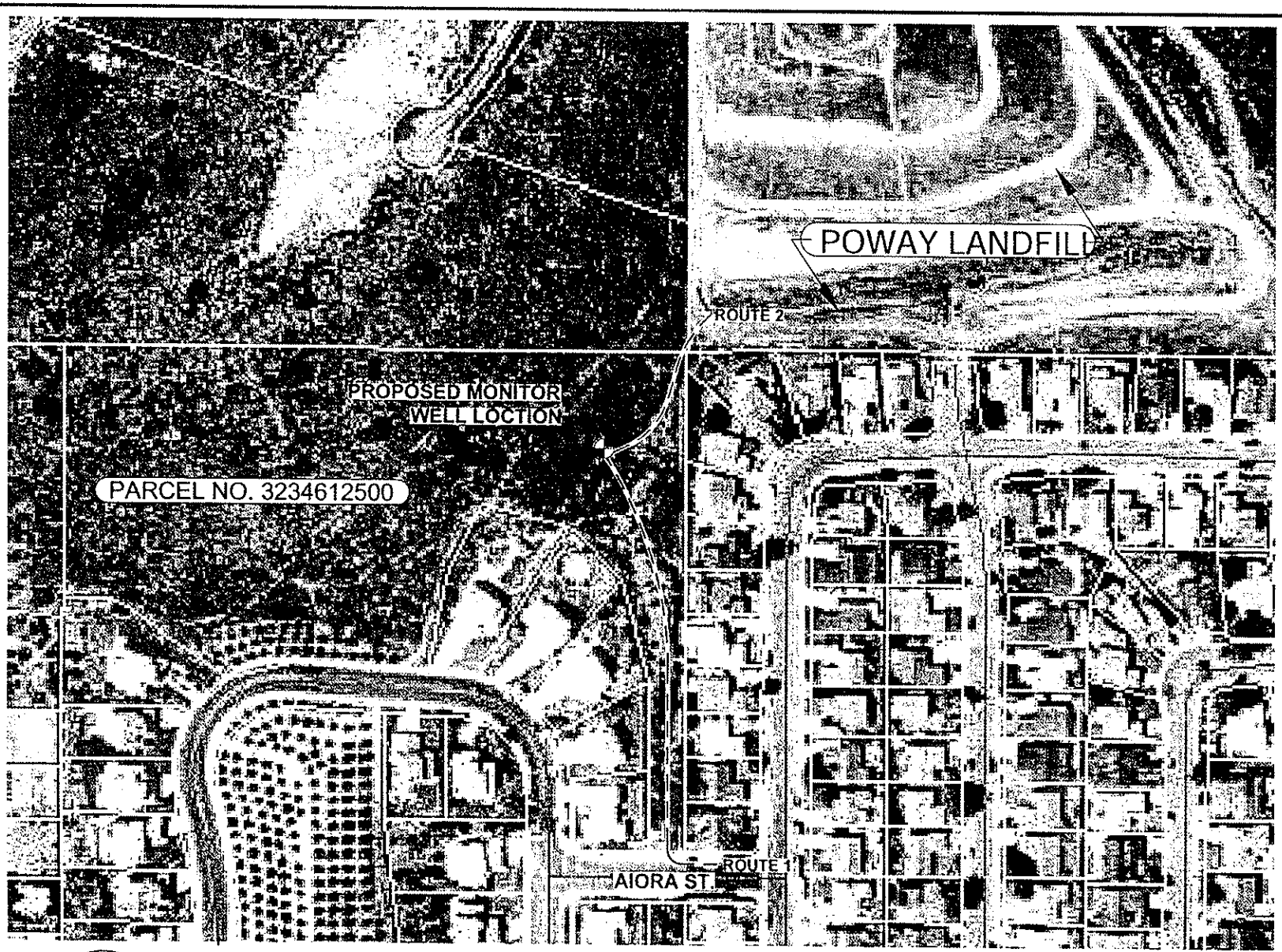
N T.S

GeoSyntec Consultants

CITY PROPERTY AND MONITOR WELL LOCATION
POWAY LANDFILL
POWAY, CALIFORNIA

FIGURE NO.	2
PROJECT NO.	SC0233-06-05
DATE:	JANUARY 2006

P:\PRJ\SDCadd\CADD\SC0233\06-05-Figs\SC0233-06-05-MW-ACCESS.dwg 1/11/06 16:36 Administrator



N.T.S

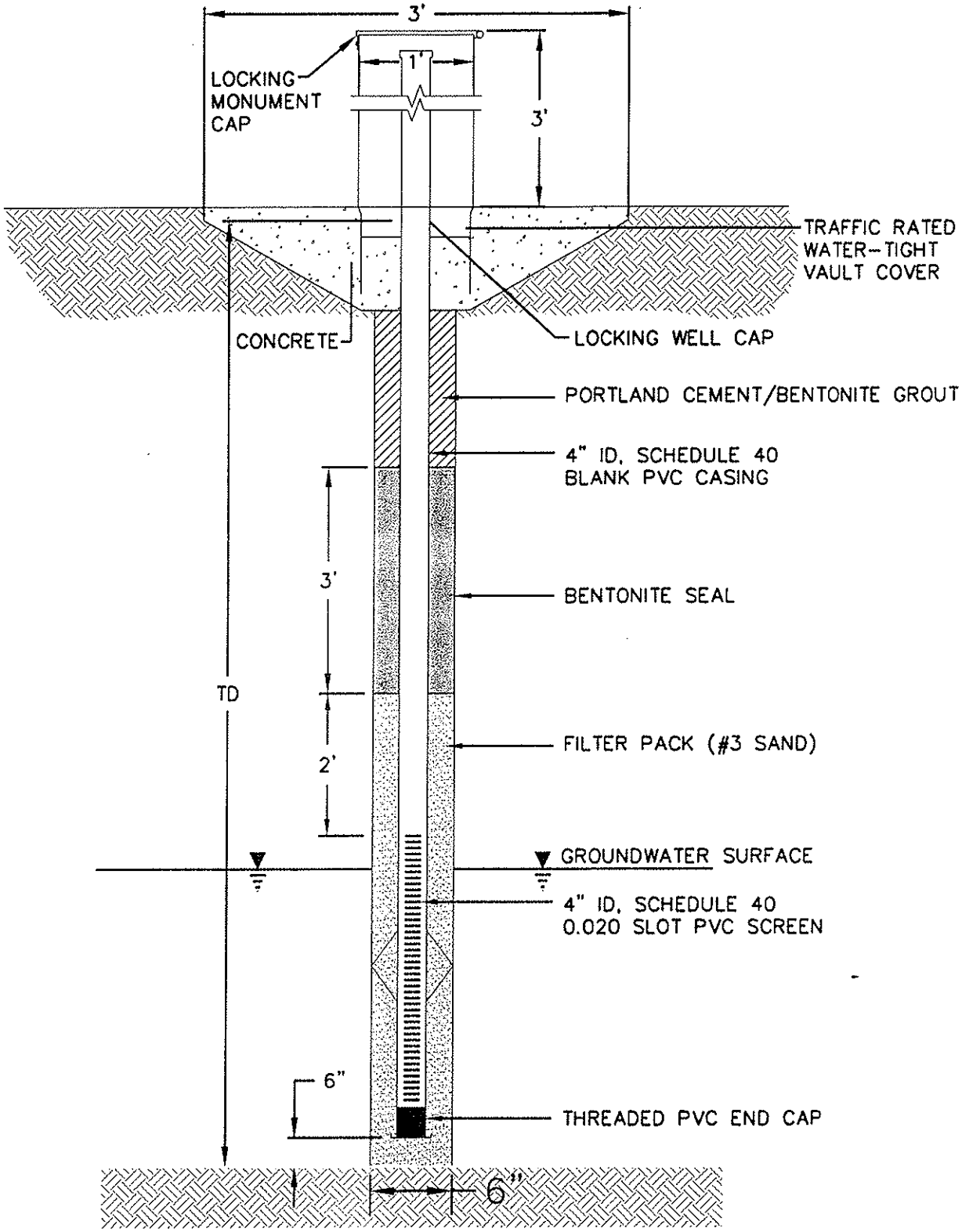
GeoSyntec Consultants

PROPERTY ACCESS ROUTES
POWAY LANDFILL
POWAY, CALIFORNIA

FIGURE NO.	3
PROJECT NO.	SC0233-06-05
DATE:	JANUARY 2006

P:\PRJ\SDCadd\CADD\SC0233\06-05-Figs\SC0233-06-05-ROUTS.dwg 1/11/06 16:47 Administrator

TYPICAL MONITOR WELL CONSTRUCTION DETAIL



GeoSyntec Consultants

DEPARTMENT OF ENVIRONMENTAL HEALTH MONITOR WELL CONSTRUCTION DIAGRAM POWAY LANDFILL POWAY, CALIFRONIA	FIGURE NO. 4 PROJECT NO. SC0233-06-05 DATE: JANUARY 2006

P:\PRJ\SDCadd\CADD\SC0233\06-05-Figs\SC0233_mon well detail.dwg 1/11/06 17:03 Administrator

Sean McClain
Hydrogeologist

GeoSyntec Consultants

11305 Rancho Bernardo Road, Suite 101
San Diego, California 92127 - USA
Telephone: (858) 674-6559 • Fax: (858) 674-6586
E-mail: smcclain@geosyntec.com

ROW NO. 06-38

CITY OF POWAY

PUBLIC RIGHT-OF-WAY PERMIT

Associated Plan No.
Contact Person Sean McClain
Address

APPLICANT PLEASE FILL OUT NUMBERED ITEMS 1-4: Phone No. 858-674-6559 ex 211 6559

1. APPLICANT, GeoSyntec Consultants, hereby requests permission to work in the following streets or other public easements (provide owner, address, and property description):
See Attachment

2. TO INSTALL (provide type of installation and approximate dimensions, length, width, and depth):
22 Soil Vapor wells (See well diagrams) located approximately 4 feet from curb in City right-of-way

3. X PRIVATE DEVELOPMENT ___SOUTH POWAY ___CITY PROJECT

4. Contractor GeoSyntec Consultants Subcontractors Vironex

Job superintendent Veryl Wittig License No. # 7115

Address 10875 Rancho Bernardo Road Suite 200

Contractor's License No. 705927 Type of License C-57

APPLICANT MUST SUBMIT THE FOLLOWING WITH THE APPLICATION:

1. Copy of the Contractor's license (Type A required).
2. Certificate of insurance for worker's compensation and general liability in the amount of $1 million naming the City as an additional insured.
3. Detailed and scaled traffic control plan for all phases of work.
4. Detailed construction schedule and clear description of work.
5. Itemized cost estimate (unless fees were previously paid with an approved plan listed above).
6. All applicable fees and deposits.

PRE-APPROVED
NOT FOR CONSTRUCTION
PENDING PRE-CONSTRUCTION MEETING

NOTE: Application will not be accepted unless items 1-6 are provided. In some cases, the City will consider a waiver of a part of the requirements of items 1-3 with submittal of a waiver request.

Hours of work 8:30 - 3:30 (8:30 a.m. and 3:30 p.m. unless otherwise specified).

Contractor must call Underground Service Alert at 1-800-422-4133 to have utilities marked out before the preconstruction meeting. After approval of permit, the City Inspector will contact the contractor and set up a time for a pre-construction meeting. City inspector must have a minimum of 48-hours notification prior to scheduling of pre-construction meeting and construction. Location of all utility cabinets or structures are subject to review, and may require an MDRA to be processed through Development Services Department, Planning division.

In consideration of the granting of this application, the permittee agrees to, and by this instrument, does hold the City of Poway, its elective and appointed officials, officers, agents, and employees harmless from any liability for claims for work done and material furnished upon the property, or any improvements made on the property covered by this permit. Permittee further agrees to hold and save harmless from any claim, cause of action, liability or responsibility for any accident, loss or damage to persons or property caused by the negligence of the Permittee, secured by the submitted certificate of insurance, arising out of the work undertaken pursuant to this permit, or any other permits that may be granted pursuant thereto. **I, the applicant, have read and understand the front and back of this application and will abide by its rules and regulations.**

Signature of Applicant Sean McClain Date 3/16/06

Approved [signature] Date 3/27/06 [signature] Date 3/27/06
Traffic Engineer Senior Civil Engineer

PERMIT VALID UNTIL: June 15, 2006 Inspector [signature] Date [illegible]

APPROVED EXTENSION DATE ________ By: ________

DEPARTMENT OF DEVELOPMENT SERVICES

RECEIPT OF FEES FOR LAND DEVELOPMENT ACTIVITIES

Project Name: Poway Landfill Monitoring Developer:

Address: Acton, Delta, El Mar, Silver View Los Olivos, Miranda, Sila Project No: ROW 06-38

Check No.: 10558 / 115447 Received By: SAN Date: 3/16/06

ACTIVITY	ACCOUNT	FEES PAID
Boundary Adjustment ($1,000/Application)	100-305-7735	
Certificate of Compliance ($1,000/Application)	100-305-7735	
Certificate of Correction ($100/Fee)		
Drainage Fee (See Schedule)	232-305-7712	
Easement Dedication ($1,000/Application)	100-305-7735	
Final/Parcel Map Plan Fee ($1,000 Sheet)	100-305-7735	
Grading Permit Fee ($100/Permit)	100-305-7235	
Grading Plan Check Fee (See Schedule)	100-305-7735	
Improvement Plan Administrative Fee ($100 Sheet)	100-305-7735	
Improvement Plan Check Fee (See Schedule)	100-305-7735	
Inspection Fee (See Schedule) 22 new wells	100-306-7737	$16600.00
Merger ($800/Application)	100-305-7735	
Minor Development Review ($500/Lot)	100-306-7737	
Miscellaneous (CIP Plans, Blueprints, Photocopies, etc.)	100-305-7736	
Park Fee (See Schedule)	411-305-7630	

GEOSYNTEC CONSULTANTS
5901 BROKEN SOUND PARKWAY, SUITE 300
BOCA RATON, FL 33487-2775
561 995 0900

63-476 / 670

No 115447

DATE 3/10/2006

AMOUNT

PAY ********10,400 dollars **00 cents ********10,400.00 DOLLARS

PAY TO THE ORDER OF: CITY OF POWAY
ENGINEERING DIVISION
CITY HALL
13325 CIVIC CENTER DRIVE
POWAY, CA 92064-5755 US

Citibank
Citibank (Florida) N.A.
[illegible]
Deerfield, FL 33441

VOID AFTER 90 DAYS

⑈115447⑈ ⑆067004764⑆ 2195223812⑈

Water System Analysis (See Schedule)	100-305-7612	
Stormwater Pollution Prevention Plan Check Fee	100-305-7735	
Stormwater Pollution Prevention Inspection Fee	100-306-7737	
TOTAL		$16600.00

M:\engserv\eng forms\Land Development forms\Receipt of Fees for Dev Svcs.doc

13325 Civic Center Drive, Poway, CA 92064-5755 (858) 668-4600

GEOSYNTEC CONSULTANTS, INC.
SAN DIEGO ACCOUNT
11305 RANCHO BERNARDO RD. STE. 101
SAN DIEGO, CA 92127

1055

63-476-670

DATE 3/15/06

PAY TO THE ORDER OF City of Poway $ 1200.00

Twelve Hundred Dollars 00/100 DOLLARS

citibank
CITIBANK, F.S.B. BR. #74
3660 WEST HILLSBORO BOULEVARD
DEERFIELD BEACH, FL 33441

FOR SD107107 · SC0233/00/09 N/Y/N

Marne Blackburn MP

⑈001055⑈ ⑆067004764⑆ 3290049632⑈

GEOSYNTEC CONSULTANTS

11305 Rancho Bernardo Road, Suite 101
San Diego, California 92127
(858) 674-6559 • Fax (858) 674-6586

FAX COVER SHEET

TO: Joann

FIRM: City of Poway

FAX NO.: (858) 665-1212

FROM: Sean McClain

SUBJECT: Right-of-way Permit

1 **PAGES INCLUDING COVER SHEET**

SENT BY: SM **DATE:** 17 March 2006 **TIME:** 10:32 AM

MESSAGE

P.O. BOX 789
POWAY, CA 92074

AND SECURITIES ADVICE FORM

OF NUMBER ______
DATE ______
INITIAL ______

PROJECT NO./REFERENCE NO.	ACCOUNT REFERENCE NO.
ROW 06-38	761- 8630 - 7895 - 7000
NAME: GeoSyntech	

TRANSACTION REQUESTED (Check box)

- ☐ CHARGES INCURRED
- ☐ CORRECTION
- ☐ INVOICE PAID
- ☐ REQUEST INVOICE (Complete the following)
- ☐ ADDITIONAL RECEIPT
- ☐ LOW BALANCE (Printout attached)
- ☐ INITIAL DEPOSIT (Complete the following)
- ☐ REFUND
- ☐ OTHER ______

NAME OF PROJECT: Poway Landfill Monitoring

DEVELOPER'S NAME: GeoSyntec

DEVELOPER'S ADDRESS: 11305 Rancho Bernardo Rd, Suite 101, SD CA 92127

ACTIVITY

CATEGORY	ACCOUNT NUMBER	AMOUNT RECEIVED
Grading Plan Check	5910	
Grading Inspection	5920	
Final Map Check	5930	
Improvement Plan Check	5940	
Improvement Inspection	5950	
Boundary Adjustment	5960	
Miscellaneous	5970	
Security Deposit	6980	$5,000—
Landscape Deposit		
TOTAL		$5,000—

COMMENTS

PREPARED BY: Scott Nespor DATE: 3/13/06

GEOSYNTEC CONSULTANTS
5901 BROKEN SOUND PARKWAY, SUITE 300
BOCA RATON, FL 33487-2776

No. 115447

DATE 3/10/2006

10,400.00 DOLLARS

PAY TO THE ORDER OF: CITY OF POWAY
ENGINEERING DIVISION
CITY HALL
13325 CIVIC CENTER DRIVE
POWAY, CA 92064-0765

VOID AFTER 90 DAYS

⑈115447⑈ ⑆067004764⑆ 2195223812⑈

GEOSYNTEC CONSULTANTS, INC.
SAN DIEGO ACCOUNT
11305 RANCHO BERNARDO RD. STE. 101
SAN DIEGO, CA 92127

1055

63-470-670

DATE 3/15/06

TO THE ORDER OF City of Poway $ 1200.00

Twelve Hundred Dollars 00/100 DOLLARS

citibank®
CITIBANK, F.S.B. DR. #74
3600 WEST HILLSBORO BOULEVARD
DEERFIELD BEACH, FL 33441

SD 10707 · 8000233/00/09 N/Y/N

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GEOSYNTEC CONSULTANTS

10875 Rancho Bernardo Road, Suite 200
San Diego, California 92127
Tel. 858.674.6559 • Fax 858.674.6586

15 March 2006

City of Poway
Planning Department
13325 Civic Center Drive
Poway, CA 92064

Subject: Information for Right-Of-Way Permit
Poway Landfill
Poway, California

GeoSyntec Consultants (GeoSyntec) is providing this information on behalf of the County of San Diego, Department of Public Works, Landfill Management (the County) for activities associated with the Poway Landfill (site). The site is located on the south side of Poway Road at 14900 Poway Road in the City of Poway (Figure 1). GeoSyntec is currently performing a study to evaluate the chemical quality of subsurface soil vapor in the residential community adjacent to the southwest property boundary of the site (Figure 2). The following information is provided for the public right-of-way permit:

- Revised Work Plan for Downgradient Soil Vapor Sampling (Attachment 1);
- Soil Vapor well Construction Diagrams (Attachment 2)
- Traffic Control Plan (Attachment 3);
- Certificate of Insurance (Attachment 4); and
- Vironex Drilling C-57 License (Attachment 5).

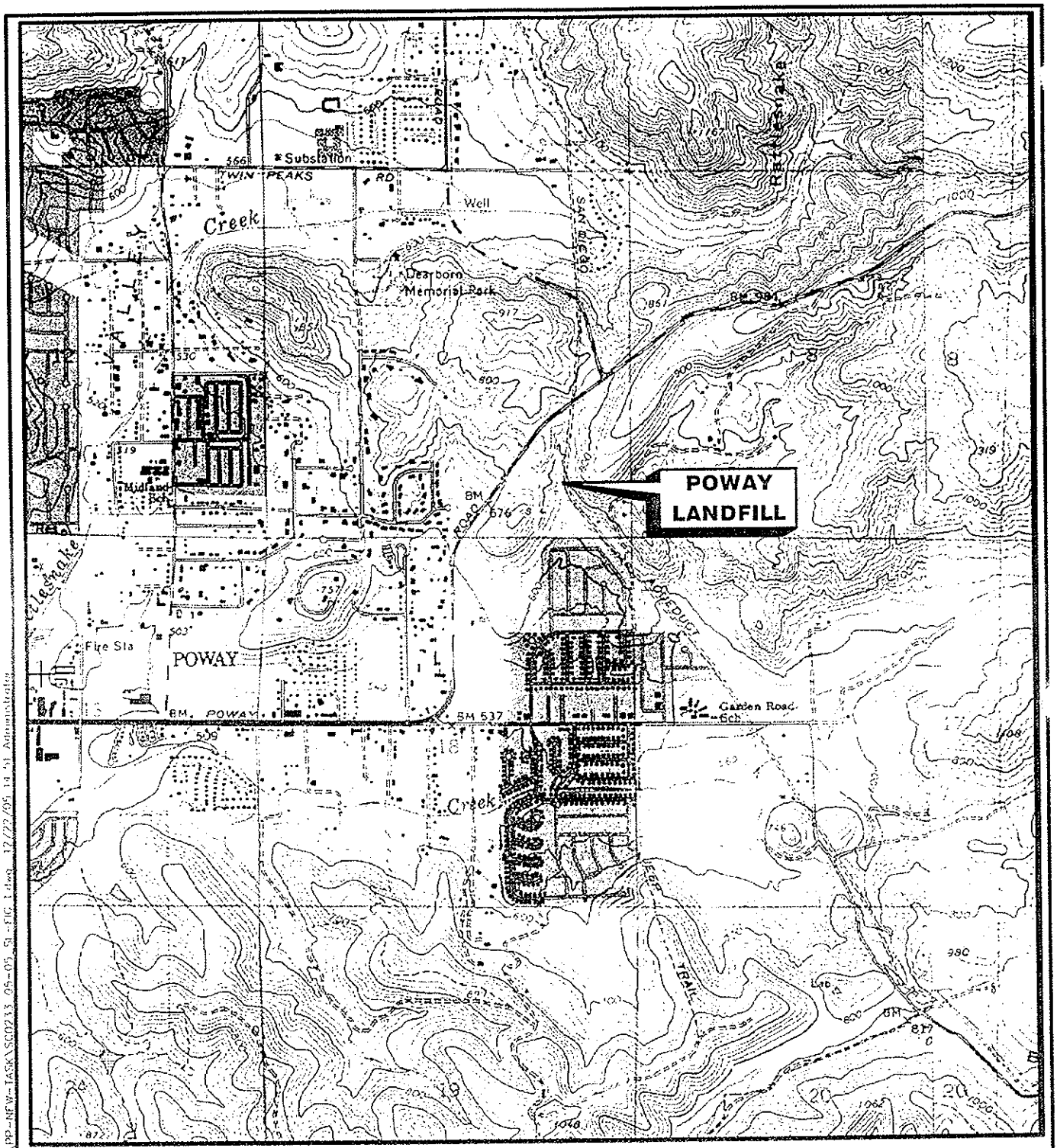
The offsite work for the City of Poway right-of-way permit is discussed in Task 2 and 3 in the Revised Downgradient Soil Vapor Sampling Work Plan. If you have any questions or require additional information, please contact me at (858) 674-6559, **or contact Mr. Barry Pulver at the County at 858-495-5480.**

Sincerely,

Sean McClain

Sean McClain
Project Manager

SC0233\Encroachment Permit.doc



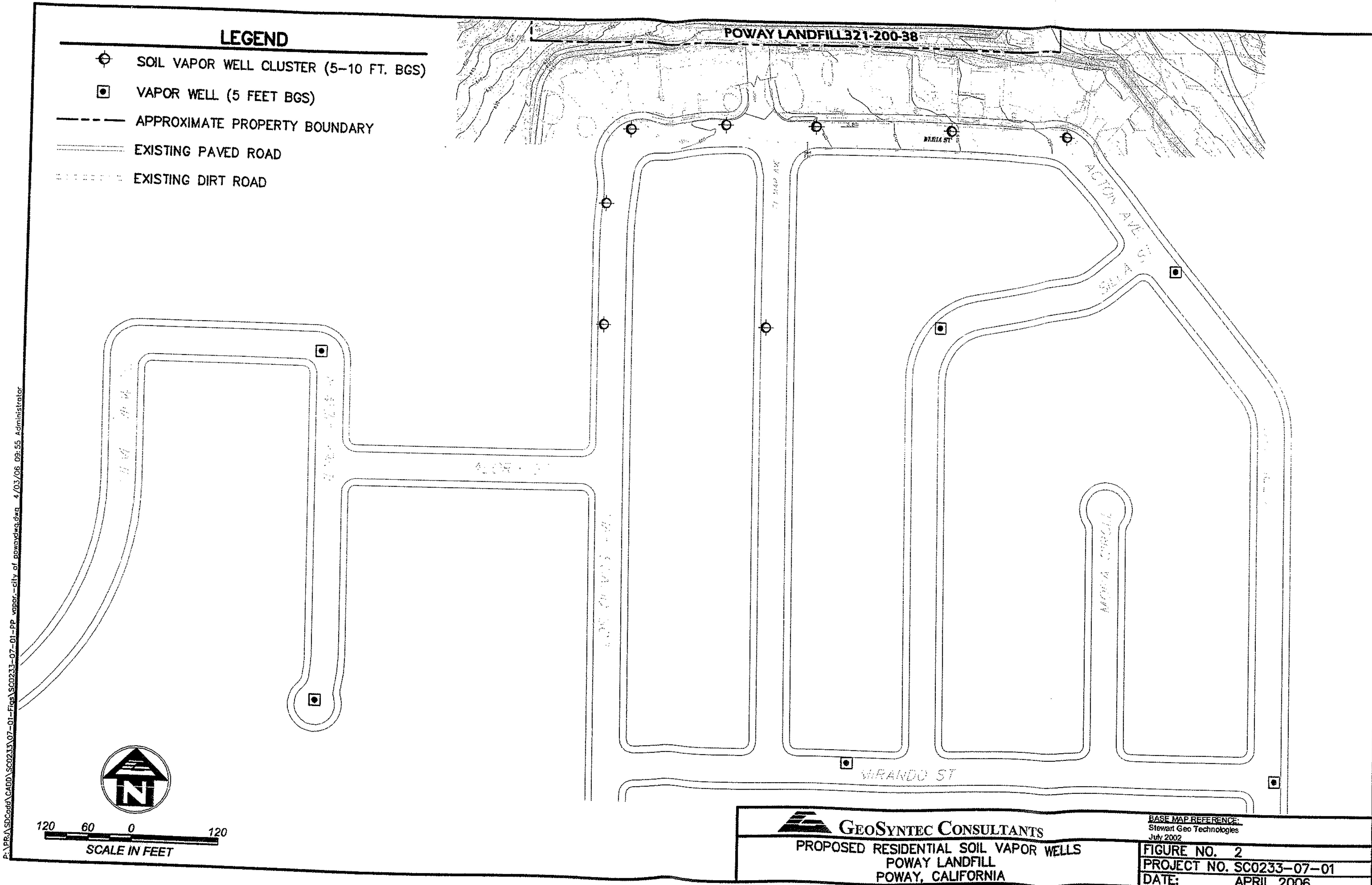
SOURCE:
NATIONAL GEOGRAPHIC (CALIFORNIA)
SEAMLESS USGS TOPOGRAPHIC MAPS ON CD-ROM
POWERED BY TOPO

2,000 1,000 0 2,000 4,000
SCALE IN FEET

GEOSYNTEC CONSULTANTS

SITE LOCATION POWAY LANDFILL POWAY, CALIFORNIA	FIGURE NO. 1 PROJECT NO. SC0233 DATE: DECEMBER 2005

P:\PRJ\SDG\dd\CADD\SC0233\05-05-\PP-NFW-TASK\SC0233_05-05_SL-FIG 1.dwg, 12/22/05 14:51 Administrator


LEGEND
SOIL VAPOR WELL CLUSTER (5–10 FT. BGS)
VAPOR WELL (5 FEET BGS)
APPROXIMATE PROPERTY BOUNDARY
EXISTING PAVED ROAD
EXISTING DIRT ROAD
POWAY LANDFILL 321-200-38
ACTON AVE
MIRANDO ST
N
120 60 0 120
SCALE IN FEET
P:\PRJ\SDCadd\CADD\SC0233\07-01-Figs\SC0233-07-01-PP vapor-city of powaydwg.dwg 4/03/06 09:55 Administrator
BASE MAP REFERENCE:
Stewart Geo Technologies
July 2002

GEOSYNTEC CONSULTANTS

PROPOSED RESIDENTIAL SOIL VAPOR WELLS
POWAY LANDFILL
POWAY, CALIFORNIA

FIGURE NO. 2
PROJECT NO. SC0233-07-01
DATE: APRIL 2006

GeoSyntec Consultants

10875 Rancho Bernardo Road, Suite 200
San Diego, California 92127
Tel. 858.674.6559 • Fax 858.674.6586

16 March 2006

Barry Pulver, P.G., C.Hg., C.E.G.
County of San Diego, Department of Public Works
Landfill Management
5201 Ruffin Road, Suite D
San Diego, CA 92123

Subject: Revised Downgradient Soil Vapor Sampling Work Plan
Poway Landfill
Poway, California

Dear Mr. Pulver:

On 9 March 2006, GeoSyntec Consultants (GeoSyntec) submitted a work plan to the Regional Water Quality Control Board (RWQCB) and County of San Diego Local Enforcement Agency (LEA) to further evaluate apparent subsurface soil vapor quality in the residential community downgradient of the Poway Landfill (the site) (GeoSyntec, 2006). On 10 and 13 March 2006, GeoSyntec received comments from the RWQCB and LEA, respectively (RWQCB and LEA, 2006). Pursuant to these comments, GeoSyntec has prepared this revised Downgradient Soil Vapor Sampling Work Plan.

BACKGROUND

The site is located on the south side of Poway Road at 14900 Poway Road in Poway, California (Figure 1). In 2004 and 2005, an active soil vapor survey was conducted along the southern site boundary and within the public right-of-way of Dehia Street south of the site (GeoSyntec 2004 and 2005). Relatively low concentrations of volatile organic carbons (VOCs) were detected in soil vapor near the southern property boundary and beneath Dehia Street. The primary constituent of concern (COC) detected in soil vapor samples collected during the two independent soil vapor surveys was benzene (Figure 2). The highest concentration of benzene identified in soil vapor sampling conducted in 2004 was 68 parts per billion-vapor by volume (ppbv) in a sample collected upgradient of the residences from boring SG-9. The highest concentration of benzene identified in soil vapor sampling conducted in 2005 was 49 ppbv in a sample collected in the City of Poway right-of-way of Dehia Street downgradient of the residences from boring SG-10. However, based on the type of constituents detected in soil vapor samples collected from Dehia Street, it appears that other sources besides landfill gas from the

Poway Landfill may be contributing to the chemical quality of soil vapor in the residential community.

Based on VOCs detected in soil vapor in the southern portion of the site and the potential hypothetical risk to the residential community adjacent to the southwest site boundary, three vapor wells were installed along the southern property boundary to further evaluate potential hypothetical impacts to the adjoining residents (Figure 2). Similar to the previous soil vapor data, benzene was the primary COC detected in soil vapor samples collected from the vapor wells at concentrations ranging from 19 ppbv (PVP-2A) to 140 ppbv (PVP-1) (Figure 2).

SCOPE OF WORK

The objectives of the work described herein are to obtain the necessary data to update the vapor phase human health risk assessment and to evaluate potential vapor migration from the site to the residential community. The following tasks will be performed to achieve the project objectives:

Task 1: Install and Sample Soil Vapor Wells Onsite
Task 2: Evaluate Subsurface Utilities
Task 3: Install and Sample Soil Vapor Wells in the City of Poway right-of-ways
Task 4: Perform Soil Vapor Sampling on Residential Properties
Task 5: Prepare Work Plan to Perform Indoor Air and/or Below Slab Soil Vapor Sampling
Task 6: Update Human Health Risk Assessment
Task 7: Perform Engineering Feasibility Study
Task 8: Prepare Report

TASK 1: INSTALL AND SAMPLE ONSITE SOIL VAPOR WELLS

The purpose of this Task is to evaluate the radius of influence of landfill gas extraction wells located near the toe of the landfill and to further evaluate the performance of the landfill gas extraction system to control vapor migration. Four soil vapor well clusters will be installed within the refuse and within the soil directly below the refuse at the toe of the landfill. An additional soil vapor well cluster will be installed between the

desiltation basin and the southern site boundary (Figure 3). In addition, two background soil vapor wells will be installed near the northern and eastern site boundaries.

The vacuum from the vapor wells will be measured when the landfill gas extraction system is on and when the system has been shut down for 48 hours to evaluate the radius of influence of landfill gas extraction wells near the toe of landfill.

Soil vapor samples will be collected from vapor well clusters screened in the waste and soil directly below waste and from selected vapor wells located at the southern site boundary. Soil vapor samples will be collected when the landfill gas system is on and also when the system has been shut down for 48 hours to evaluate the landfill gas systems performance to control landfill gas migration. Soil vapor wells will be installed and sampled as described in Task 3 below.

Storm water runoff from Poway Road flows into a concrete channel located on the east property boundary where it discharges and infiltrates in the desiltation basin on the southern property boundary (Figure 3). Soil vapor samples are not recommended in the desiltation basin due to the presence of storm water infiltrating and filling in the pore space in the sample locations. Therefore, one surface water sample will be collected in the concrete channel where storm water enters the site. In addition, soil samples will be collected from three locations within the desiltation basin. Soil samples will be collected from each boring at depths of 2.5 and 5 feet bgs. The surface water and soil samples will be analyzed for VOCs by EPA Method 8260.

TASK 2: EVALUATE SUBSURFACE UTILITIES

Potential subsurface pathways for vapor transport include vapor migration through permeable fill material surrounding utilities installed within the subsurface. Further, leaking sanitary systems may affect the chemical quality of soil vapor. GeoSyntec will review storm water and sewer as-built construction drawings and engineering specifications for City of Poway right-of-ways of Sunset View Road, Dehia, Mirando and Silla Streets, Los Olivos, El Mar and Acton Avenues to determine the location and construction specifications of these utilities in the study area. This analysis will be used to select soil vapor sampling locations adjacent to underground utilities.

TASK 3: INSTALL AND SAMPLE SOIL VAPOR WELLS IN THE CITY OF POWAY RIGHT-OF-WAYS

Based on VOCs detected in soil vapor samples collected in the southern portion of the site and beneath Dehia Street and El Mar Avenue south of the site, vapor wells will be installed within the residential community downgradient of the site to evaluate apparent subsurface soil vapor quality in the residential community (Figure 3). Eight soil vapor well clusters and six single soil vapor wells will be installed within the City of Poway right-of-ways of Sunset View Road, Dehia, Mirando and Silla Streets, Los Olivos, El Mar and Acton Avenues. The installation of vapor wells will allow for the evaluation of background soil vapor quality, soil vapor quality at the site and in the residential community.

The vapor wells will be installed within small diameter borings advanced with a direct push rig. Department of Toxic Substances Control (DTSC) guidelines require that the minimum amount of soil vapor sampling needed in the vertical direction to be collected at depths of 5 and 15 to 20 feet bgs (DTSC, 2004). However, depth to groundwater measured during the last two consecutive monitoring events in monitor wells POGW-12, -15, -17A and -18A, located in the residential community, ranged from 7 to 18 feet bgs. Therefore, soil vapor well clusters will consist of wells placed at approximate depths of 5 and 10 feet below ground surface (bgs). If groundwater is encountered in the locations of the soil vapor clusters or moisture is observed (i.e. capillary fringe) in the soil at a depth of 10 feet bgs, a single soil vapor well will be constructed at a depth of 5 feet bgs. Single vapor wells will be placed at depths of 5 feet bgs. Proposed soil vapor well construction details are provided on Figure 4.

GeoSyntec will notify Underground Service Alert of the intent to drill at the site; subcontract a geophysical survey of potential subsurface utilities or other underground obstructions; and obtain the necessary permits from the City of Poway and the County of San Diego Department of Environmental Health (DEH).

Soil vapor wells installed in the residential community will be sampled bi-weekly for one month, monthly for two months, then quarterly for three consecutive events. However, depending on the initial soil vapor sampling results, selected vapor wells may be sampled on a more or less frequent basis.

In addition to the work described above, the potential exposure to landfill-related constituents migration through utilities will be evaluated. Four soil vapor samples will be collected from within the fill material surrounding utilities located within the City of Poway right-of-way of El Mar Avenue and Dehia Street to evaluate potential vapor migration from the landfill through utilities. The vapor wells will be installed within small diameter borings advanced with hand auger equipment to the top of the fill material surrounding utilities.

Soil vapor sampling and testing procedures will be conducted in accordance with the County of San Diego Department of Environmental Health Site Assessment and Mitigation Manual and DTSC soil vapor sampling guidelines. Soil vapor samples will be collected in 1-liter Summa canisters using dedicated flow controllers calibrated by the analytical laboratory at a flow rate of 200 ml/min. Prior to collection of soil vapor samples, each of the new proposed soil vapor wells will be allowed to equilibrate for a minimum of 48 hours. Following equilibration and prior to collecting samples, three "dead space" volumes will be purged. Soil vapor samples will be collected in 1-liter Summa canisters using dedicated flow controllers calibrated by the analytical laboratory at a flow rate of 200 ml/min. In addition to the vapor samples collected from the wells, three duplicate samples, three ambient air field blank samples, and one trip blank sample will be collected per each sampling event. Soil vapor and quality control samples will be analyzed for VOCs by EPA Method TO-15 which will include three additional constituents to the list (carbon disulfide, trans-1,4-dichloro-2-butene and methyl iodide) and fixed gases by Method ASTM-D-1946 by Air Toxics Ltd. in Folsom, California.

TASK 4: PERFORM SOIL VAPOR SAMPLING ON RESIDENTIAL PROPERTIES

Based on the results of samples collected from vapor wells advanced in the City right-of-ways, a soil vapor survey will be performed on selected residential properties. Based on the initial findings, the soil borings will be advanced near each of the residential properties located adjacent to the south of the landfill on Dehia Street between El Mar and Los Olivos Avenue have been selected; however, other properties may be sampled if warranted (Figure 3). Soil borings will be advanced using small diameter drive rods to facilitate collection of soil vapor samples at a depth of 5 feet bgs. At three locations, soil

vapor samples will be collected at a depth of 2.5, 5 and 10 feet bgs to develop vertical profiles. Up to two locations per residential property, soil samples will be collected at depths of 1, 2.5 and 5 feet bgs and analyzed by ASTM D 2210 to develop soil moisture profiles. Soil samples for soil moisture analysis will also be collected at 2.5, 5 and 10 feet bgs at the three locations where vertical profiles are advanced. Temporary soil vapor probes will be constructed within the small drive rod using dedicated nylon tubing for each soil vapor sample.

Soil vapor samples will be collected in 1-liter Summa canisters described in Task 3. Prior to collection of soil vapor samples, each temporary soil vapor probe will be allowed to equilibrate for a minimum of 1 hour. In addition to the vapor samples collected from the temporary borings, one duplicate sample, one ambient air field blank sample, and one trip blank sample will be collected each day sampling is performed.

Written permission from selected residential property owners will be required prior to collecting soil vapor samples next to the residential home pads. GeoSyntec will coordinate and assist the County in obtaining access to each parcel.

TASK 5: PREPARE WORK PLAN TO PERFORM INDOOR AIR SAMPLING AND/OR BELOW SLAB SOIL VAPOR SAMPLING

A detailed analysis of the need to perform indoor air sampling and/or below slab soil vapor sampling (collectively referred to as indoor air sampling) of adjacent residences will be performed. Pending the results of this analysis, indoor air sampling may be performed following recently developed, EPA and DTSC guidance. Indoor air sampling may aid to determine whether potential landfill-related COCs affect indoor air quality.

Typically, indoor air contains dozens of chemicals due to normal household products. GeoSyntec will develop an indoor air sampling plan which may include the following:

- Pre-Sampling surveys for other chemicals (paints, solvents, fuels, dry-cleaning, adhesives, new materials). Prior to sampling, this survey will be distributed to each of the target residences to identify potential sources of constituents that may be present in specific homes that are not be due to landfill gas;

- Building Design/Construction. The ventilation systems for each residence affect vapor intrusion pathways and exposure parameters;
- Outdoor Sources. Lawn maintenance procedures, residential automotive repair/maintenance, and other activities that may contribute to constituents detected in soil gas in the residential community; and
- Meteorology (barometric pressure, temperature, precipitation and wind).

After the appropriate regulatory agencies approve the work plan and right of entry agreements are executed with the property owners, the work plan to collect indoor air samples will be implemented.

TASK 6: UPDATE HUMAN HEALTH RISK ASSESSMENT

Soil vapor data collected from the vapor wells and vapor samples collected near the residential properties will be used to update the human health risk assessment described in the Report of Waste Discharge (ROWD) (GeoSyntec, 2005). The updated human health risk assessment will compare soil vapor data from the samples previously collected near the southern site boundary to the new data collected during sampling events from the wells located in the residential community. The updated human health risk assessment will be performed using the DTSC modifications to the Johnson and Ettinger (J&E) model and VAPRISK DEH model. The results of the updated human health risk assessment will be presented in the summary report.

TASK 7: PERFORM ENGINEERING FEASIBILITY STUDY

Based on the findings of the soil vapor survey and human health risk assessment, a detailed analysis of remedial technologies and associated alternatives to mitigate potential landfill-related soil vapor impacts from the site will be completed, if warranted.

A preliminary screening of remedial alternatives has been performed. Several technologies have been evaluated that may be effective in mitigating potential landfill-related soil vapor impacts. Potential remedial alternatives are based on COC characteristics, the known extent and concentrations of COCs, remediation objectives, and previous experience at other sites. The following remedial alternatives have been considered for the Poway Landfill:

- Soil Vapor Extraction;
- Landfill Gas Extraction System Enhancement;
- Air Curtain;
- Desiltation Basin Enhancement;
- Hydrologic Barriers;
- Natural Attenuation;
- Monitoring; and
- No Action.

Pilot studies for viable remedial measures will be performed as necessary to refine the evaluation of mitigation alternatives. The feasibility of each alternative will be evaluated based on the effectiveness, implementability, and cost. Based on this evaluation and in consultation with the RWQCB, the best-suited alternative will be implemented.

TASK 8: PREPARE REPORT

A summary report will be prepared following the completion of Tasks 1 through 7. This report will describe field procedures, results of the soil vapor sampling and updated human health risk assessment. In addition, the site conceptual model will be updated based on the findings of the work described herein. Lastly, a conceptual design for the best-suited remedial alternative will be provided, if warranted.

The final report will be submitted to the RWQCB and uploaded into the GeoTracker data base.

PROJECT SCHEDULE

Work will commence immediately after receiving the necessary permits and access agreements. It is anticipated that the encroachment permit from the City of Poway and property access agreements from selected property owners may take up to 2 months for approval. Soil vapor probe installation and soil vapor sampling could be completed within two to three weeks. Approximately six weeks will be required to evaluate analytical data, update the human health risk assessment and perform the feasibility study. Based on this schedule it is anticipated that the summary of findings report would be submitted to the RWQCB approximately two months after obtaining the permits and access agreements.

PROPOSED WORK	SCHEDULE
Task 1 - Install and Sample Onsite Soil Vapor Wells	March - April 2006
Task 2 - Evaluate Subsurface Utilities	March 2006
Task 3 - Install and Sample Soil Vapor Wells in the City of Poway Right-of-Ways	March - April 2006
Task 4 - Perform Soil Vapor Sampling on Residential Properties	March – April 2006
Task 5 - Prepare Work Plan to Perform Indoor Air Sampling	May 2006
Task 6 - Update Human Health Risk Assessment	May – June 2006
Task 7 - Perform Engineering Feasibility Study	June 2006
Task 8 - Prepare Report	July 2006

If you have any questions or require additional information regarding the scope of work described herein, please contact the undersigned at (858) 674-6559.

Sincerely,

Sean McClain
Project Manager

Sam Williams, P.G. CHg.
Project Director

Enclosures:

Figures: Figure 1 - Site Location
Figure 2 – Primary VOC concentrations in Soil Vapor
Figure 3 - Proposed Residential and Site Soil Vapor Well Locations
Figure 4 – Soil Vapor Well Construction

REFERENCES

Department of Toxic Substances Control, 2004. *Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air,* December 2004.

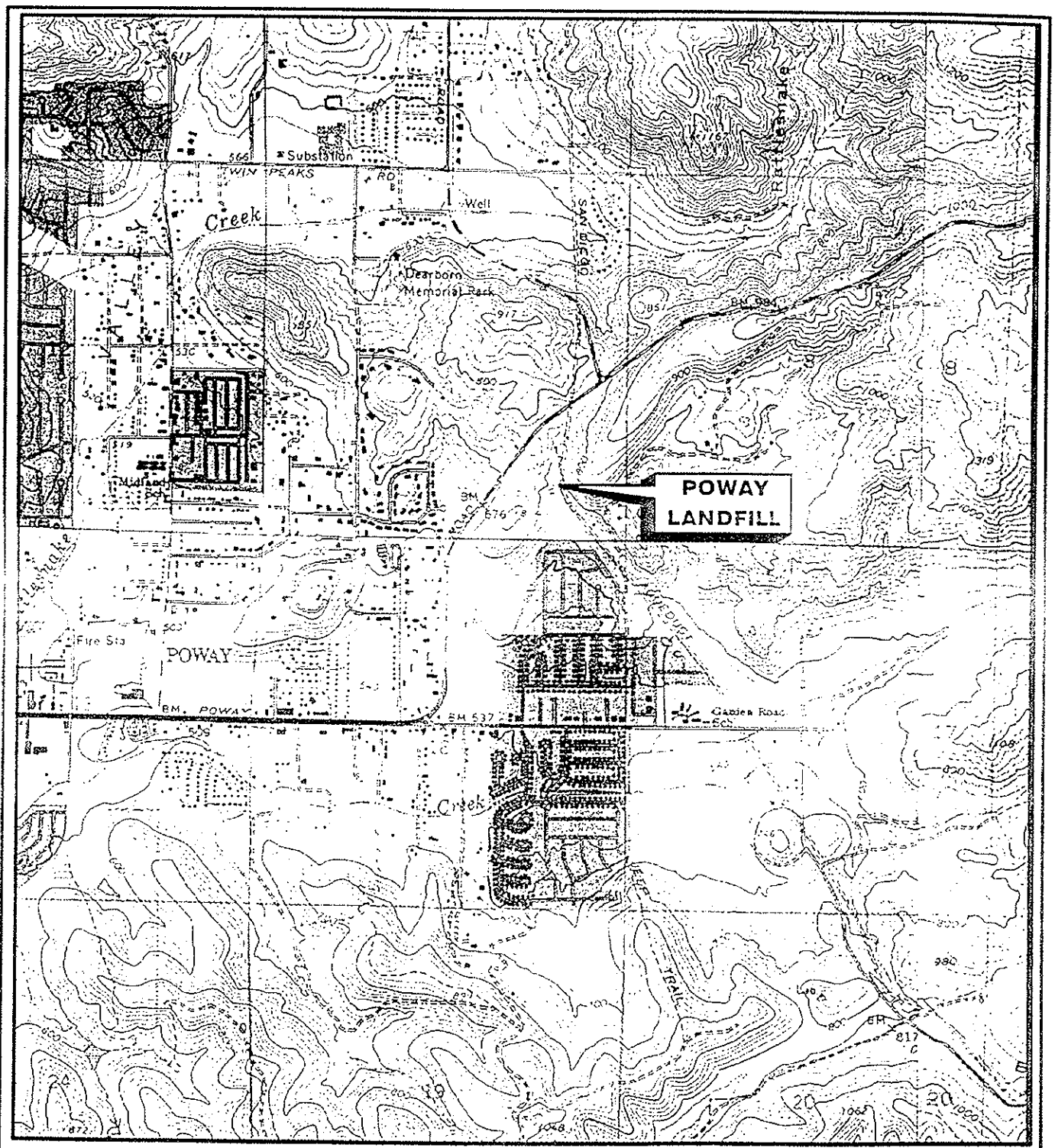
GeoSyntec Consultants, 2006. *Downgradient Soil Vapor Sampling Work Plan*, Poway Landfill, prepared for County of San Diego, Department of Public Works, March 2006.

GeoSyntec Consultants, 2005. *Updated Report of Waste Discharge and Engineering Feasibility Study*, Poway Landfill, prepared for County of San Diego, Department of Public Works, December 2005.

GeoSyntec Consultants, 2004. *Phase II Evaluation Monitoring Program*, Poway Landfill, prepared for County of San Diego, Department of Public Works, August 2004.

San Diego County Department of Environmental Health Local Enforcement Agency, 2006. Comments on Work Plan, Email Correspondence from Kerry McNeill of LEA to Barry S. Pulver San Diego County Department of Public Works Landfill Management, 13 March 2006.

San Diego Regional Water Quality Control Board, 2006 Downgradient Soil Vapor Sampling Work Plan Comments, email from Kelly Dorsey RWQCB to Barry S. Pulver San Diego County Department of Public Works Landfill Management, 10 March 2006.



SOURCE:
NATIONAL GEOGRAPHIC (CALIFORNIA)
SEAMLESS USGS TOPOGRAPHIC MAPS ON CD-ROM
POWERED BY TOPO

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SCALE IN FEET

GEOSYNTEC CONSULTANTS

SITE LOCATION POWAY LANDFILL POWAY, CALIFORNIA	FIGURE NO. 1 PROJECT NO. SC0233 DATE: DECEMBER 2005

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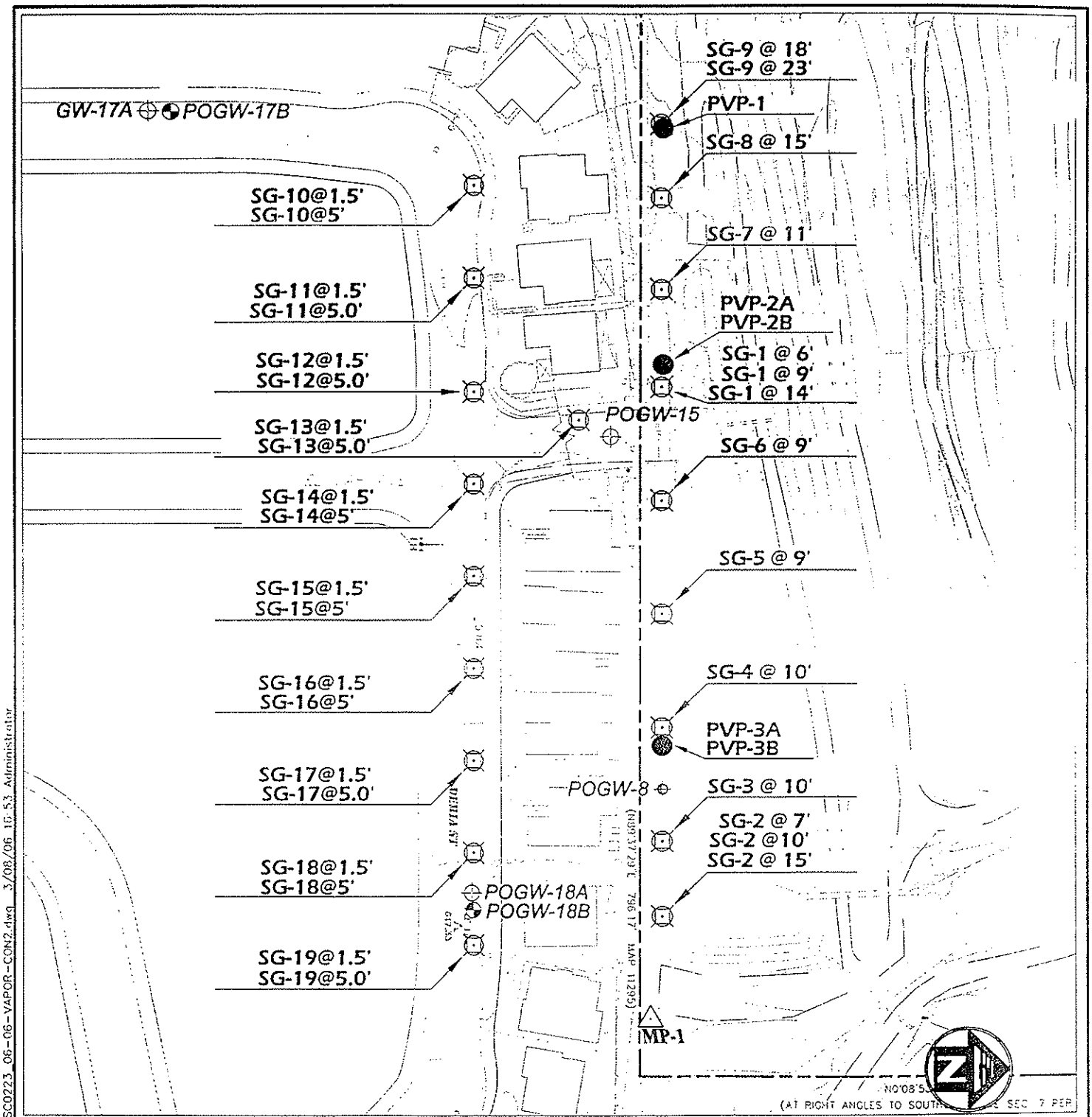

SAMPLE DATA KEY

Sampling ID and Depth BGS.

Benzene (ppbv)

SG-2 @ 15' 2.5

LEGEND

SG-10 EXISTING SOIL GAS SAMPLING LOCATION

MP-1 LANDFILL GAS MONITORING PROBE

PVP-1A SOIL VAPOR PROBE

POGW-18A ALLUVIAL GROUNDWATER MONITOR WELL

POGW-18B UPPER FRACTURE ZONE GROUNDWATER MONITOR WELL

100 50 0

SCALE IN FEET

GEOSYNTEC CONSULTANTS

BASE MAP REFERENCE:
Stewart Geo Technologies July 2002

PRIMARY VOC CONCENTRATIONS IN SOIL VAPOR
POWAY LANDFILL
POWAY, CALIFORNIA

FIGURE NO. 2

PROJECT NO. SC0233-05-05

DATE: MARCH 2006

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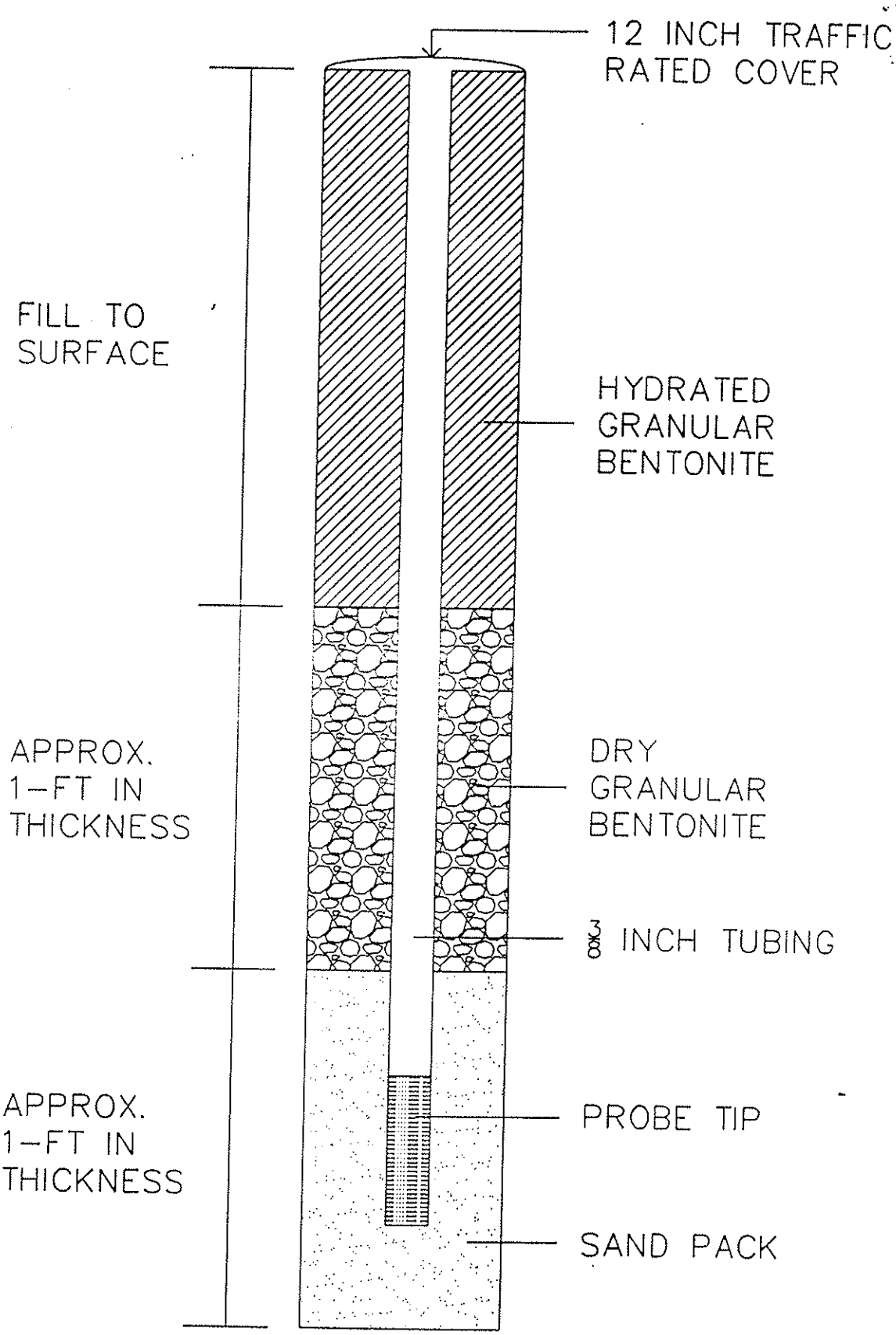


GeoSyntec Consultants

SOIL VAPOR WELL CONSTRUCTION
POWAY LANDFILL
POWAY, CALIFORNIA

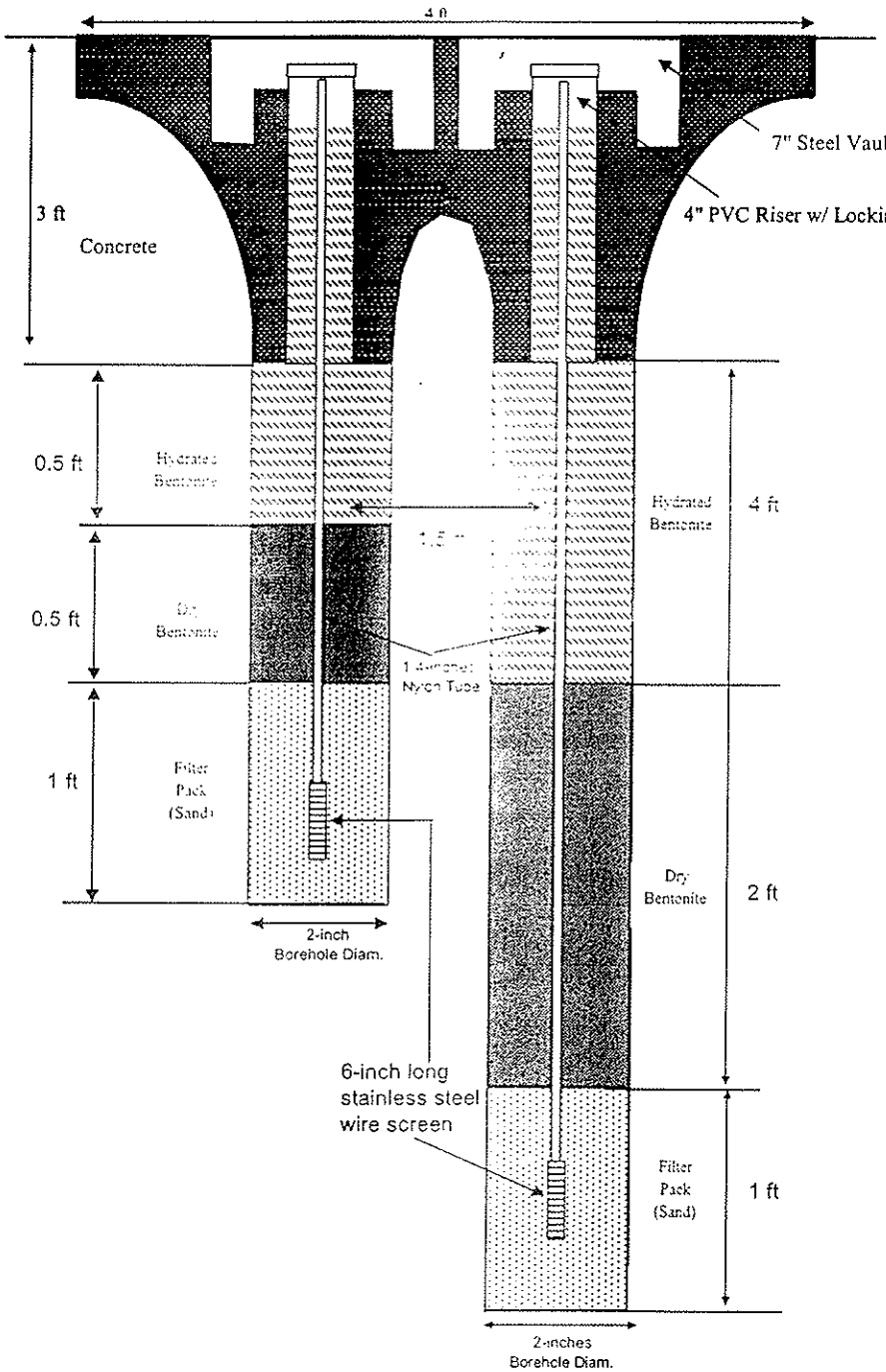
FIGURE NO.	4
PROJECT NO.	SC0233-06-06
DATE:	MARCH 2006

J:\SC0233\06-06-FIGURES\SC0233-06-06 Fig 4.dwg 3/08/06 17:33 RPark

GeoSyntec Consultants

Proposed Soil Vapor Well Cluster Construction

Site:	Poway Landfill	Date:	3/15/06
Well ID:	Soil Vapor Well Cluster	Drilling Method:	Direct Push
Drilling Company:	Vironex	Proposed Boring Depth:	5-10 feet bgs
Drillers:		Proposed Boring Diam:	2-inches
Geologist:	Sean McClain	Proposed Well Depth:	5-10 feet bgs
		Well Diameter:	2 Vapor well cluster, each
			1/4 -inches diameter



Proposed Well Construction:

Material:	1/4 " nylon tubing
Inside Diamter:	
Proposed Filter Pack:	
Type/Brand:	Sand
Amount Used:	6" above & 6" below
Placement Method:	Tremie
Proposed Seal:	&
Type Brand:	Granular Bentonite
Amount Used:	0.5, - 2' dry; 0.5' - 4, hydrated above
Vol. Fluid Added:	
Set-up Time:	
Placement Method:	Tremmie
Proposed Grout:	
Type/Brand:	Concrete
Amount Used:	
Vol. Fluid Added:	
Placement Method:	

Proposed Well Completion:

Above Grade / Below Grade / Flush Mounted

Guard Posts? Y / N

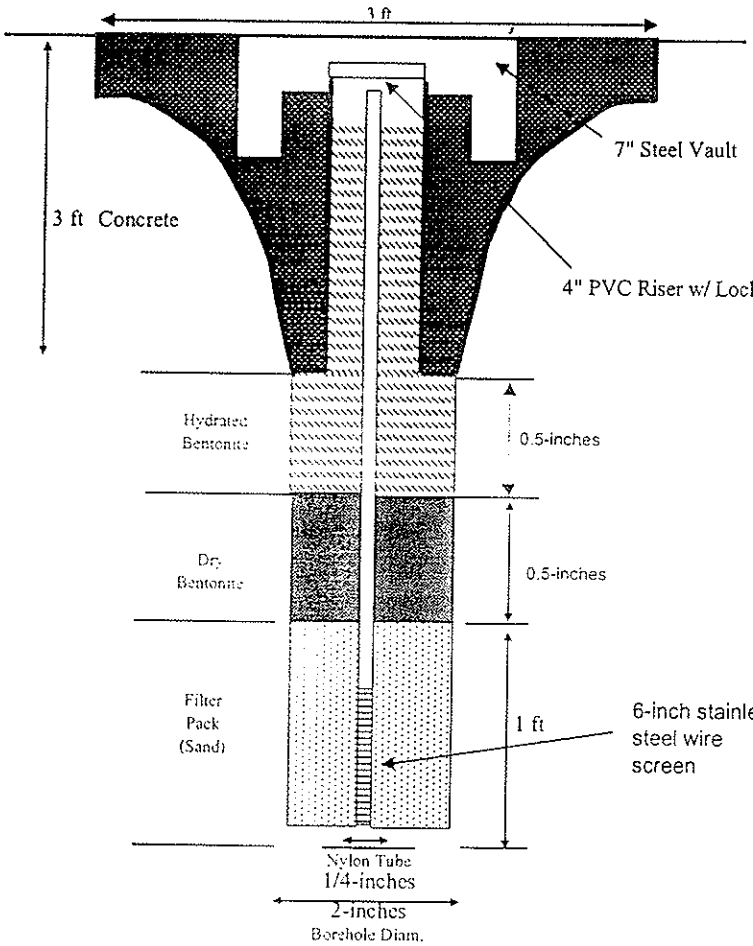
Pad Size:	4X3
Cover Type/Size:	7-inch steel Flush Mount
Comments:	

Geologist Signature:

GeoSyntec Consultants

Proposed Single Soil Vapor Well Construction

..e:	Poway Landfill	Date:	3/10/06
Well ID:	Single Soil Vapor Well	Drilling Method:	Direct Push
Drilling Company:	Vironex	Proposed Boring Depth:	5 feet bgs
Drillers:		Proposed Boring Diameter:	2-inches
Geologist:	Sean McClain	Proposed Well Depth:	5 feet bgs
		Well Diameter:	1/4 -inches diameter



Proposed Well Construction:

Material:	1/4 " nylon tubing
Inside Diamter:	
Proposed Filter Pack:	
Type/Brand:	Sand
Amount Used:	1 ft
Placement Method:	Tremie
Proposed Seal:	
Type/Brand:	Granualar Bentonite
Amount Used:	0.5" dry and 0.5" hydrated
Vol. Fluid Added:	
Set-up Time:	
Placement Method:	Tremmie
Proposed Grout:	
Type/Brand:	Concrete
Amount Used:	
Vol. Fluid Added:	
Placement Method:	

Proposed Well Completion:

Above Grade / Below Grade / **Flush Mounted**

Guard Posts? **Y / N**

Pad Size:	3X3
Cover Type/Size:	7-inch steel Flush Mount
Comments:	

Geologist Signature:

Insured	Coverage Type/Expiration Date				Endorsement	Job or Project	Contact	Renewal Needed
Geosyntec Consultants, inc	General ☑ 9/1/2006	Profnl ☑ 9/1/2006			General	ROW Permit	Pat Phelps	☑
Contract No. 05-038, 06-0	Auto ☑ 9/1/2006	Excess ☑ 9/1/2006						
Contract Start/End -	Wkrs Comp ☑ 9/1/2006	Misc. ☐			Days to Expiration: 169			Approved
Issa, Khalid	General ☐	Profnl ☐			General	ROW Permit	Pat Phelps	☑
Contract No. 05-040	Auto ☐	Excess ☐						
Contract Start/End -	Wkrs Comp ☐	Misc. ☑ 5/16/2005			Days to Expiration:			Approved
Kajima USA, Inc.	General ☑ 7/1/2006	Profnl ☐			None	ROW Permit	Pat Phelps	☑
Contract No. 05-041	Auto ☑ 7/1/2006	Excess ☑ 7/1/2006						
Contract Start/End -	Wkrs Comp ☑ 7/1/2006	Misc. ☐			Days to Expiration: 107			Rejected
Mark V. Agee Contractors, Inc.	General ☑ 9/24/2006	Profnl ☐			General	ROW Permit	Pat Phelps	☑
Contract No. 05-047 & 05-	Auto ☐	Excess ☑ 9/24/2006						
Contract Start/End -	Wkrs Comp ☑ 12/15/2006	Misc. ☐			Days to Expiration: 192			Rejected
Marrokal Construction Company	General ☑ 7/28/2006	Profnl ☐			General	ROW permit	Pat Phelps	☑
Contract No. 05-023	Auto ☐	Excess ☐						
Contract Start/End -	Wkrs Comp ☑ 1/1/2007	Misc. ☐			Days to Expiration: 134			Approved
Miller Brooks Environmental, Inc.	General ☑ 2/1/2007	Profnl ☑ 2/1/2007			None	ROW permit	Pat Phelps	☐
Contract No. 05-103	Auto ☑ 2/1/2007	Excess ☐						
Contract Start/End -	Wkrs Comp ☑ 2/1/2007	Misc. ☐			Days to Expiration: 322			Rejected
Montijo Backhoe Inc.	General ☑ 1/12/2006	Profnl ☐			General	ROW Permit	Pat Phelps	☐
Contract No. 05-108	Auto ☐	Excess ☐						
Contract Start/End -	Wkrs Comp ☑ 6/1/2006	Misc. ☐			Expired			Approved
Neal Electric, Inc.	General ☑ 4/1/2006	Profnl ☐			General	ROW Permit	Pat Phelps	☐
Contract No. 05-149	Auto ☑ 4/1/2006	Excess ☑ 4/1/2006						
Contract Start/End -	Wkrs Comp ☑ 4/1/2006	Misc. ☐			Days to Expiration: 16			Approved

City of Poway

Printed Date 3/23/2006 12:20:28 PM

Insurance Certification Record

Department: Development Services

Insured	Geosyntec Consultants, inc
Job or Project	ROW Permit
Contact	Pat Phelps
Contract No.	05-038, 06-009, 06-038

Approved

General Liability	☑	9/1/2006	*Professional Liability*	☑	9/1/2006
Auto Liability	☑	9/1/2006	*Wkrs Compensation*	☑	9/1/2006
Excess Liability	☑	9/1/2006	*Misc. Liability*	☐	
Endorsement	☐	General	*Renewal Needed*	☑	

Notes

ROW #06-038 added on 3/20/06. SS

MARSH

CERTIFICATE OF INSURANCE

CERTIFICATE NUMBER
ATL-000632666-06

PRODUCER
Marsh USA Inc.
1560 SAWGRASS CORPORATE PKWY.
SUITE 300
SUNRISE, FL 33345-9010
Attn: WILLIAM BARROWS FtLauderdale.certs@marsh.com

S81127-ALL-CAS2-04-05 BOCAR ALL4

INSURED
GEOSYNTEC CONSULTANTS, INC.
5901 BROKEN SOUND PARKWAY NW, SUITE 300
BOCA RATON, FL 33487-2775

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER OTHER THAN THOSE PROVIDED IN THE POLICY. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES DESCRIBED HEREIN.

COMPANIES AFFORDING COVERAGE

COMPANY A COMMERCE AND INDUSTRY INSURANCE COMPANY

COMPANY B AMERICAN INTERNATIONAL SPECIALTY LINES

COMPANY C INSURANCE COMPANY STATE OF PENNSYLVANIA

COMPANY D

COVERAGES This certificate supersedes and replaces any previously issued certificate for the policy period noted below. 3

THIS IS TO CERTIFY THAT POLICIES OF INSURANCE DESCRIBED HEREIN HAVE BEEN ISSUED TO THE INSURED NAMED HEREIN FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THE CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, CONDITIONS AND EXCLUSIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS		
A	GENERAL LIABILITY	GL4178618	09/01/04	09/01/05	GENERAL AGGREGATE	$	2,000,000
	[X] COMMERCIAL GENERAL LIABILITY				PRODUCTS - COMP/OP AGG	$	2,000,000
	[ ] CLAIMS MADE [X] OCCUR				PERSONAL & ADV INJURY	$	1,000,000
	[ ] OWNER'S & CONTRACTOR'S PROT				EACH OCCURRENCE	$	1,000,000
	[ ]				FIRE DAMAGE (Any one fire)	$	100,000
	[X] SIR: 100,000				MED EXP (Any one person)	$	25,000
A	AUTOMOBILE LIABILITY	CA5053937 (AOS)	09/01/04	09/01/05	COMBINED SINGLE LIMIT	$	1,000,000
A	[X] ANY AUTO	CA1955450 (TX)	09/01/04	09/01/05			
A	[ ] ALL OWNED AUTOS	CA1955451 (MA)	09/01/04	09/01/05	BODILY INJURY (Per person)	$	
	[ ] SCHEDULED AUTOS						
	[X] HIRED AUTOS				BODILY INJURY (Per accident)	$	
	[X] NON-OWNED AUTOS						
	[ ]				PROPERTY DAMAGE	$	
	GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT	$	
	[ ] ANY AUTO				OTHER THAN AUTO ONLY		
	[ ]				EACH ACCIDENT	$	
					AGGREGATE	$	
B	EXCESS LIABILITY	BE8085625	09/01/04	09/01/05	EACH OCCURRENCE	$	10,000,000
	[X] UMBRELLA FORM				AGGREGATE	$	10,000,000
	[ ] OTHER THAN UMBRELLA FORM				SIR:	$	10,000
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	9682856 (AOS)	09/01/04	09/01/05	[X] WC STATUTORY LIMITS [ ] OTHER		
A		9682857 (CA)	09/01/04	09/01/05	EL EACH ACCIDENT	$	1,000,000
C	THE PROPRIETOR/ PARTNERS/EXECUTIVE OFFICERS ARE: [X] INCL [ ] EXCL	WC9682858 (NJ)	09/01/04	09/01/05	EL DISEASE-POLICY LIMIT	$	1,000,000
					EL DISEASE-EACH EMPLOYEE	$	1,000,000
B	OTHER Prof. Liability & Contr. Poll. Liab. Claims Made Form	195-19-04	09/01/04	09/01/05	Each Claim / Aggregate SIR: Each Claim Incl. Prod. & Completed Ops		5,000,000 300,000

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS
CITY OF POWAY IS INCLUDED AS AN ADDITIONAL INSURED EXCEPT FOR WORKERS' COMPENSATION.

CERTIFICATE HOLDER

CITY OF POWAY
13325 CIVIC CENTER DRIVE
POWAY, CA 92064

CANCELLATION

SHOULD ANY OF THE POLICIES DESCRIBED HEREIN BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE INSURER AFFORDING COVERAGE WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED HEREIN, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER AFFORDING COVERAGE, ITS AGENTS OR REPRESENTATIVES, OR THE ISSUER OF THIS CERTIFICATE.

MARSH USA INC.
BY: Frances Sigurani Frances Sigurani

MM1(3/02) VALID AS OF: 03/09/05

POLICY NUMBER: GL 4178618

COMMERCIAL GENERAL LIABILITY
CG 20 10 07 04

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – SCHEDULED PERSON OR ORGANIZATION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name Of Additional Insured Person(s) Or Organization(s):	Location(s) Of Covered Operations
City of Poway 13325 Civic Center Drive Poway, CA 92064	

Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

A. Section II – Who Is An Insured is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:

1. Your acts or omissions; or
2. The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured(s) at the location(s) designated above.

B. With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to "bodily injury" or "property damage" occurring after:

1. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or
2. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

858 674 6586 Shaun

RECEIVED
MAR 20 2006
CITY OF POWAY
DEVELOPMENT SERVICES

CITY OF POWAY
DEVELOPMENT SERVICES DEPARTMENT

REQUEST FOR WAIVER OF RIGHT-OF-WAY PERMIT SUBMITTAL REQUIREMENTS

Right-of-Way Permit No. 06-38

Applicant GeoSyntec Consultants Date 3-16-06

Address 10875 Rancho Bernardo Road Ste. 200
San Diego, CA 92127

Telephone No(s). 858-674-6559 Ex 211

☒ Private development project ☐ City Capital Improvement project

Description of work to be done: Install Vapor wells in City of Poway Right-of-ways. Drillers use Contractor license C-57, which is a component of a Contractor A license

Waiver requested: Can you waive the requirement to obtain the C-57 license for Contractor A license.

Justification: This is the ~~the~~ California required license to drill with and install wells.

FOR OFFICE USE ONLY

Approval date 3/27/06

Senior Engineer Kenneth W. Dan

Comments

M:\engservices forms\Land Development forms\Request for waiver .doc

3/04

ENDORSEMENT NO. 05

This endorsement, effective 12:01 AM, 03/22/05
Forms a part of Policy No: GL 417-86-18
Issued to: Geosyntec Consultants, Inc.
By: Commerce & Industry Insurance Company

It is hereby agreed that the following form is added as respects to form CG 20 10 (07 04) attached:

Additional Insured – Owners, Lessees or Contractors – Scheduled Person or Organization.

All other terms, conditions, and exclusions shall remain the same.

Authorized Representative

State Of California
CONTRACTORS STATE LICENSE BOARD
ACTIVE LICENSE

Consumer Affairs

License Number **705927**

Entity CORP

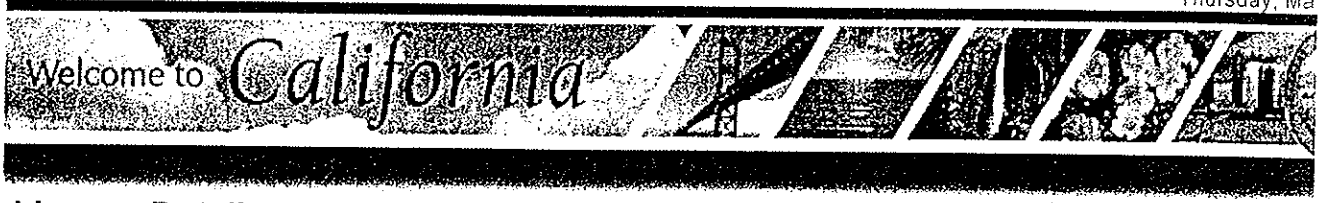
Business Name VIRONEX INC

Classification(s) C57

Expiration Date 05/31/2007

California Home

Thursday, Ma



License Detail

CALIFORNIA CONTRACTORS STATE LICEN

Contractor License # 705927

DISCLAIMER

A license status check provides information taken from the CSLB license data base. Before on this information, you should be aware of the following limitations:

- CSLB complaint disclosure is restricted by law (B&P 7124.6). If this entity is subject tc complaint disclosure, a link for complaint disclosure will appear below. Click on the lin button to obtain complaint and/or legal action information.
- Per B&P 7071.17, only construction related civil judgments reported to the CSLB are disclosed.
- Arbitrations are not listed unless the contractor fails to comply with the terms of the arbitration.
- Due to workload, there may be relevant information that has not yet been entered ont Board's license data base.

Extract Date: **03/16/2006**

*** * * Business Information * * ***

VIRONEX INC
1225 E MCFADDEN
SANTA ANA, CA 92705
Business Phone Number: (714) 647-6290

Entity: **Corporation**
Issue Date: **05/04/1995** Expire Date: **05/31/2007**

*** * * License Status * * ***

This license is current and active. **All information below should be reviewed.**

*** * * Classifications * * ***

Class	Description
C57	WELL DRILLING (WATER)

*** * * Bonding Information * * ***

CONTRACTOR'S BOND: This license filed Contractor's Bond number **40078120** in the an **$10,000** with the bonding company

PLATTE RIVER INSURANCE COMPANY.
Effective Date: **01/01/2004**

Contractor's Bonding History

BOND OF QUALIFYING INDIVIDUAL(1): This license filed Bond of Qualifying Individual i
LPM8713332 for TODD WILLIAM HANNA in the amount of **$7,500** with the bonding con
FIDELITY AND DEPOSIT COMPANY OF MARYLAND.
Effective Date: **01/16/2004**

BQI's Bonding History

*** * * Workers Compensation Information * * ***

This license has workers compensation insurance with the
GRANITE STATE INSURANCE COMPANY
Policy Number: **WC1513302** Effective Date: **04/15/2005** Expire Date: **04/15/2006**

Workers Compensation History

Personnel List

License Number Request Contractor Name Request Personnel Name Request

Salesperson Request Salesperson Name Request

GEOSYNTEC CONSULTANTS
11305 Rancho Bernardo Road, Suite 101
San Diego, California 92127
(858) 674-6559 • Fax (858) 674-6586

FAX COVER SHEET

TO: Joann

FIRM: City of Poway

FAX NO.: (858) 665-1212

FROM: Sean McClain

SUBJECT: Right-of-way Permit

1 PAGES INCLUDING COVER SHEET

SENT BY: SM DATE: 17 March 2006 TIME: 10:32 AM

MESSAGE

CITY OF POWAY
P.O. BOX 789
POWAY, CA 92074

DEVELOPER AND SECURITY ADVICE

Post-It® Fax Note 7671 | Date | # of pages ▶ 1
To Shawn McClain | From Scott
Co./Dept. | Co. Poway
Phone # | Phone #
Fax # | Fax #

PROJECT NO./REFERENCE NO. ROW 06-38

NAME GeoSyntech

TRANSACTION REQUESTED (Check box)

- ☐ CHARGES INCURRED
- ☐ CORRECTION
- ☐ INVOICE PAID
- ☐ REQUEST INVOICE (Complete the following)
- ☐ ADDITIONAL RECEIPT
- ☐ LOW BALANCE (Printout attached)
- ☐ INITIAL DEPOSIT (Complete the following)
- ☐ REFUND
- ☐ OTHER

NAME OF PROJECT Poway Landfill Monitoring

DEVELOPER'S NAME

DEVELOPER'S ADDRESS

ACTIVITY

CATEGORY	ACCOUNT NUMBER	AMOUNT RECEIVED
Grading Plan Check	5910	
Grading Inspection	5920	
Final Map Check	5930	
Improvement Plan Check	5940	
Improvement Inspection	5950	
Boundary Adjustment	5960	
Miscellaneous	5970	
Security Deposit	5980	$5,000—
Landscape Deposit		
TOTAL		$5,000—

COMMENTS

PREPARED BY Scott Nespor DATE 3/13/06

Shawn McClain
858-674-6586

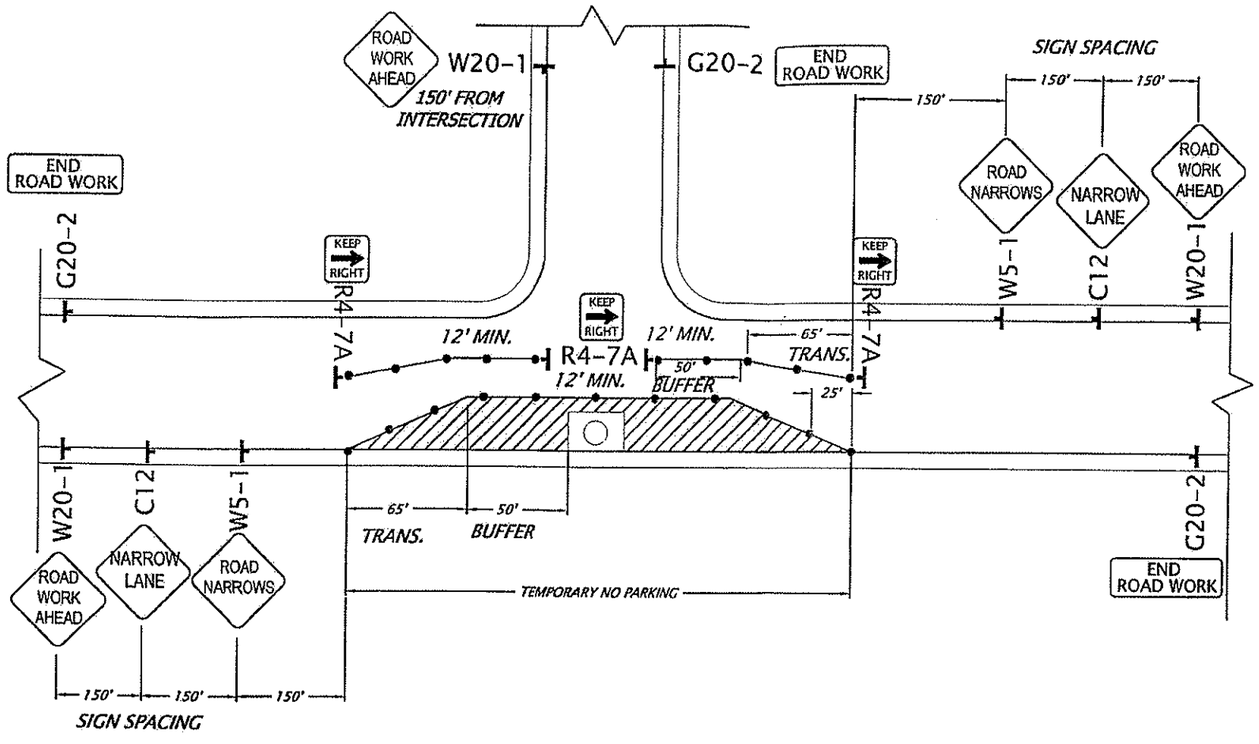
PLACE CHECK HERE

3/04

(*) 8:30AM - 3:30PM

WORK HOURS
M-F

OK
CA
3/27/06



NOT TO SCALE

CONTRACTOR TO PROVIDE ACCESS TO DRIVEWAYS AT ALL TIMES

W20-1 AND G20-2 SHALL BE PLACED ON ANY AFFECTED CROSS STREET ACCORDING TO SPEED LIMIT OF CROSS STREET

Cecilia's Safety Service Traffic Control
STATE LIC.# 787634/C31

CECILIA'S SAFETY SERVICE, INC.
525 STEVENS AVENUE WEST
SOLANA BEACH, CA 92075
OFFICE: (858) 793-4465
FAX: (858) 793-4495
E-MAIL: cecilias@pacbell.net

PLAN PREPARED BY:
NAME: CRAIG WALL
DATE: 03/13/06

CSS JOB NUMBER:
GSC06-1074(#1)

CONTRACTOR:
GEOSYNTEC CONSULTANTS
11305 RANCHO BERNARDO RD, STE 101
SAN DIEGO, CA 92127
PHONE: (858) 674-6559
FAX: (858) 674-6586

TYPE OF WORK:
INSTALLATION OF VAPOR WELLS

THOMAS GUIDE:
1190-H3

APPROVED BY:
NAME OF AGENCY
SIGNATURE
DATE
TITLE

CITY OF POWAY

TRAFFIC CONTROL PLAN FOR: STREET NAME

8:30AM - 3:30PM

WORK HOURS
M-F

OK
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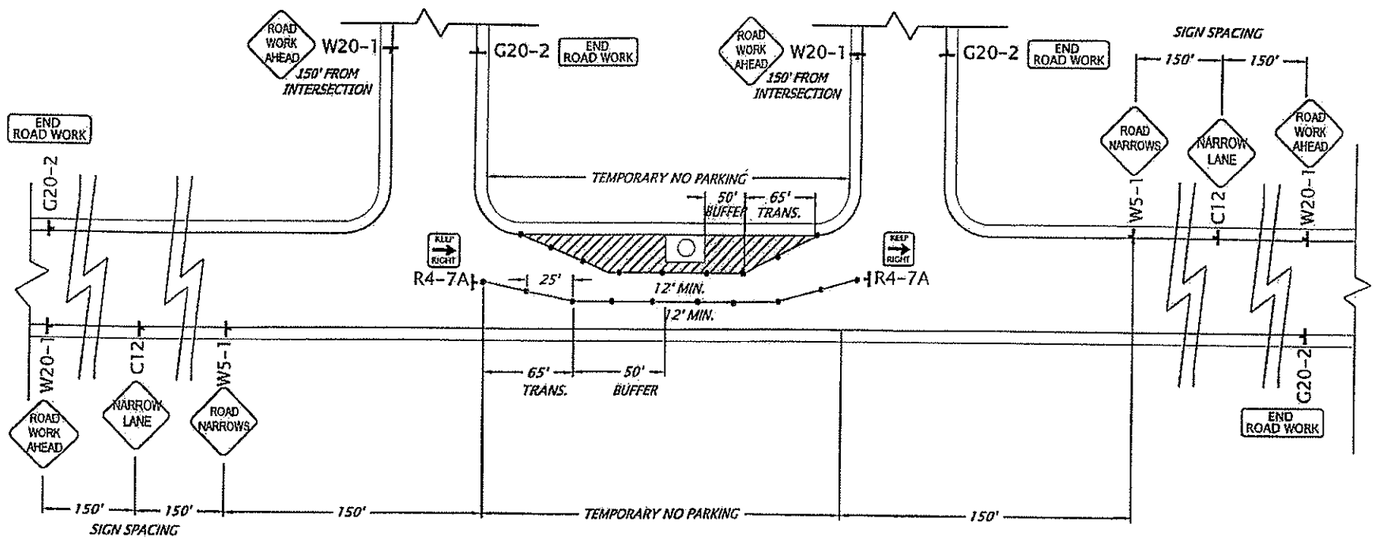
3/27/06



NOT TO SCALE

CONTRACTOR TO PROVIDE ACCESS TO DRIVEWAYS AT ALL TIMES

W20-1 AND G20-2 SHALL BE PLACED ON ANY AFFECTED CROSS STREET ACCORDING TO SPEED LIMIT OF CROSS STREET

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Cecilia's Safety Service Traffic Control
STATE LIC.# 787634/C31

CECILIA'S SAFETY SERVICE, INC.
525 STEVENS AVENUE WEST
SOLANA BEACH, CA 92075
OFFICE: (858) 793-4465
FAX: (858) 793-4495
E-MAIL: cecilias@pacbell.net

PLAN PREPARED BY:
NAME: CRAIG WALL
DATE: 03/13/06

CSS JOB NUMBER:
GSC06-1074(#2)

CONTRACTOR:
GEOSYNTEC CONSULTANTS
11305 RANCHO BERNARDO RD, STE 101
SAN DIEGO, CA 92127
PHONE: (858) 674-6559
FAX: (858) 674-6586

TYPE OF WORK:
INSTALLATION OF VAPOR WELLS

THOMAS GUIDE:
1190-H3

APPROVED BY:
NAME OF AGENCY
SIGNATURE
DATE
TITLE

CITY OF POWAY

TRAFFIC CONTROL PLAN FOR: STREET NAME

(X) 8:30 AM - 3:30 PM

WORK HOURS
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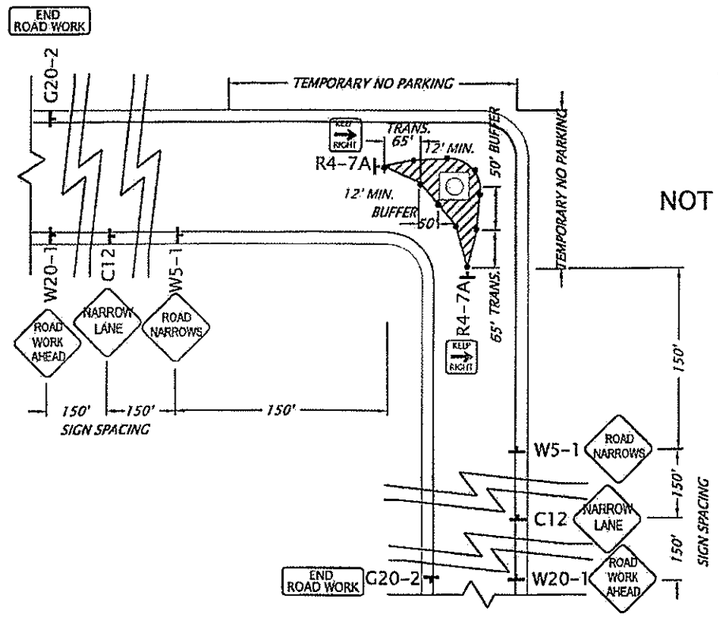
M-F

OK
CA
3/27/06



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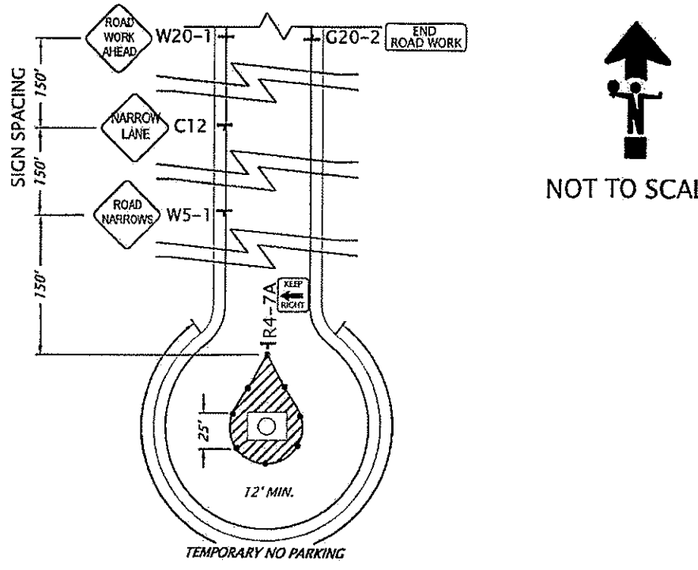
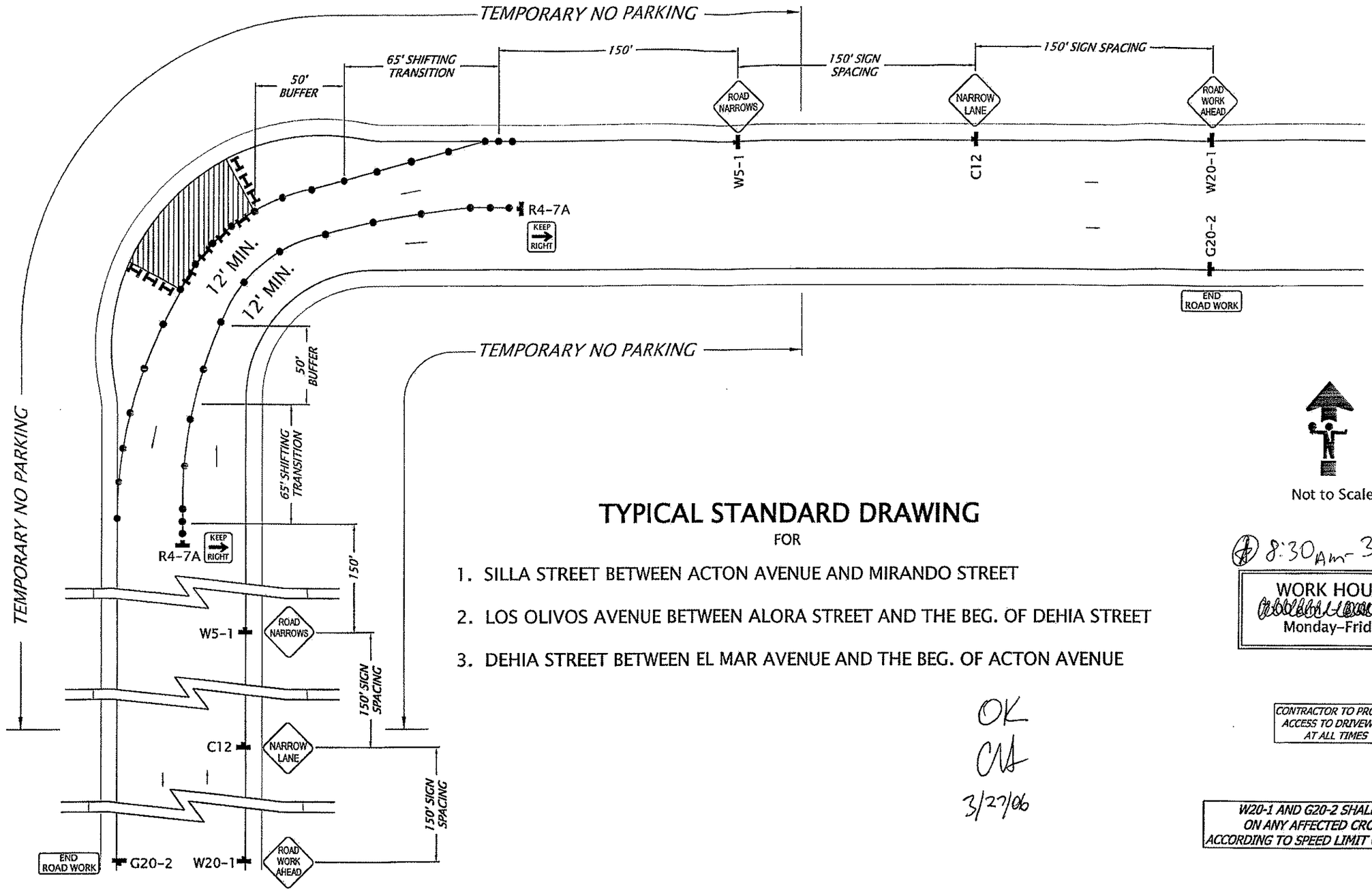


NOT TO SCALE

CONTRACTOR TO PROVIDE ACCESS TO DRIVEWAYS AT ALL TIMES

W20-1 AND G20-2 SHALL BE PLACED ON ANY AFFECTED CROSS STREET ACCORDING TO SPEED LIMIT OF CROSS STREET

Cecilia's Safety Service Traffic Control STATE LIC.# 787634/C31 CECILIA'S SAFETY SERVICE, INC. 525 STEVENS AVENUE WEST SOLANA BEACH, CA 92075 OFFICE: (858) 793-4465 FAX: (858) 793-4495 E-MAIL: cecilias@pacbell.net	PLAN PREPARED BY: NAME: CRAIG WALL DATE: 03/13/06 CSS JOB NUMBER: GSC06-1074(#3&7)	CONTRACTOR: GEOSYNTEC CONSULTANTS 11305 RANCHO BERNARDO RD, STE 101 SAN DIEGO, CA 92127 PHONE: (858) 674-6559 FAX: (858) 674-6586	TYPE OF WORK: INSTALLATION OF VAPOR WELLS THOMAS GUIDE: 1190-H3	APPROVED BY: NAME OF AGENCY SIGNATURE DATE TITLE	CITY OF POWAY TRAFFIC CONTROL PLAN FOR: STREET NAME PAGE 3 OF 6



TYPICAL STANDARD DRAWING

FOR

1. SILLA STREET BETWEEN ACTON AVENUE AND MIRANDO STREET
2. LOS OLIVOS AVENUE BETWEEN ALORA STREET AND THE BEG. OF DEHIA STREET
3. DEHIA STREET BETWEEN EL MAR AVENUE AND THE BEG. OF ACTON AVENUE

OK
CA
3/27/06

Not to Scale

8:30 Am - 3:30 pm

WORK HOURS
Monday–Friday

CONTRACTOR TO PROVIDE ACCESS TO DRIVEWAYS AT ALL TIMES

W20-1 AND G20-2 SHALL BE PLACED ON ANY AFFECTED CROSS STREET ACCORDING TO SPEED LIMIT OF CROSS STREET

Cecilia's Safety Service Traffic Control
STATE LIC.# 787634/C31

CECILIA'S SAFETY SERVICE, INC.
525 STEVENS AVENUE WEST
SOLANA BEACH, CA 92075
OFFICE: (858) 793-4465
FAX: (858) 793-4495
E-MAIL: cecilias@pacbell.net

PLAN PREPARED BY:
NAME: M. NIETO
DATE: 03/13/06

CSS JOB NUMBER:
GSC06-1074(#4)

CONTRACTOR:
GEOSYNTEC CONSULTANTS
11305 RANCHO BERNARDO RD, STE 101
SAN DIEGO, CA 92127
PHONE: (858) 674-6559
FAX: (858) 674-6586

TYPE OF WORK:
INSTALLATION OF VAPOR WELLS

THOMAS GUIDE:
1190-H3

APPROVED BY:
NAME OF AGENCY
SIGNATURE
DATE:
TITLE

CITY OF POWAY

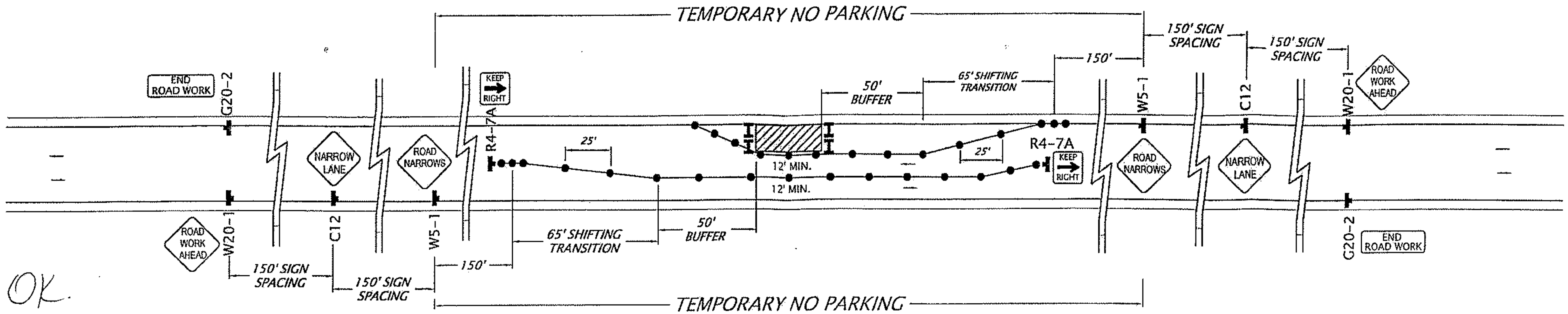
TRAFFIC CONTROL PLAN FOR: TYPICAL SCENARIO

WORK HOURS
Monday–Friday

8:30Am - 3:30pm

CONTRACTOR TO PROVIDE ACCESS TO DRIVEWAYS AT ALL TIMES

W20-1 AND G20-2 SHALL BE PLACED ON ANY AFFECTED CROSS STREET ACCORDING TO SPEED LIMIT OF CROSS STREET



OK

3/27/06

TYPICAL STANDARD DRAWING

(Not to scale)

FOR

1. EL MAR AVENUE BETWEEN MIRANDO STREET AND DEHIA STREET
2. LOS OLIVOS AVENUE BETWEEN ALORA STREET AND DEHIA STREET
3. DEHIA STREET BETWEEN EL MAR AVENUE AND THE BEG. OF ACTON AVENUE

Cecilia's Safety Service Traffic Control STATE LIC.# 787634/C31	CECILIA'S SAFETY SERVICE, INC. 525 STEVENS AVENUE WEST SOLANA BEACH, CA 92075 OFFICE: (858) 793-4465 FAX: (858) 793-4495 E-MAIL: cecilias@pacbell.net	PLAN PREPARED BY: NAME: M. NIETO DATE: 03/13/06 CSS JOB NUMBER: GSC06-1074(#5)	CONTRACTOR: GEOSYNTEC CONSULTANTS 11305 RANCHO BERNARDO RD, STE 101 SAN DIEGO, CA 92127 PHONE: (858) 674-6559 FAX: (858) 674-6586	TYPE OF WORK: INSTALLATION OF VAPOR WELLS THOMAS GUIDE: 1190-H3	APPROVED BY: NAME OF AGENCY SIGNATURE DATE TITLE	CITY OF POWAY TRAFFIC CONTROL PLAN FOR: TYPICAL SCENARIO PAGE 5 OF 6

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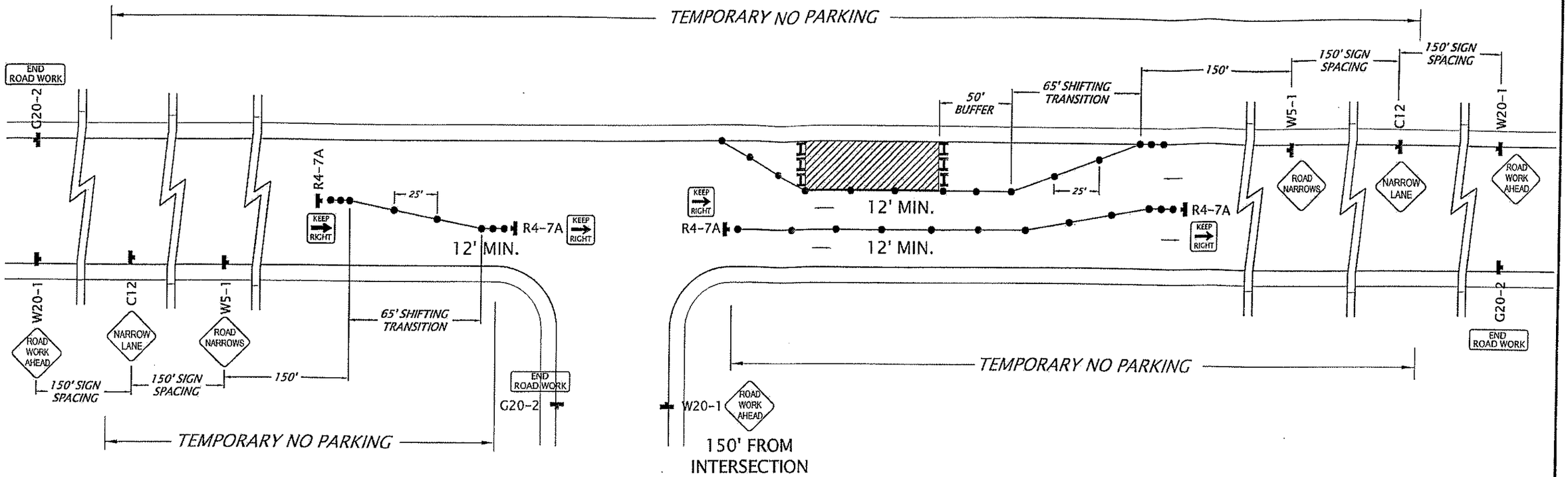

TYPICAL STANDARD DRAWING

(Not to scale)

FOR

1. ACTON AVENUE NEAR INTERSECTION WITH SILLA STREET
2. DEHIA STREET NEAR INTERSECTION WITH EL MAR AVENUE
3. DEHIA STREET BETWEEN EL MAR AVENUE AND LOS OLIVOS AVENUE

OK
CA
3/27/06

8:30Am - 3:30pm

WORK HOURS
Monday–Friday

CONTRACTOR TO PROVIDE ACCESS TO DRIVEWAYS AT ALL TIMES

Not to Scale

W20-1 AND G20-2 SHALL BE PLACED ON ANY AFFECTED CROSS STREET ACCORDING TO SPEED LIMIT OF CROSS STREET

Cecilia's Safety Service Traffic Control
STATE LIC.# 787634/C31

CECILIA'S SAFETY SERVICE, INC.
525 STEVENS AVENUE WEST
SOLANA BEACH, CA 92075
OFFICE: (858) 793-4465
FAX: (858) 793-4495
E-MAIL: cecilias@pacbell.net

PLAN PREPARED BY:
NAME: M. NIETO
DATE: 03/13/06

CSS JOB NUMBER:
GSC06-1074(#6)

CONTRACTOR:
GEOSYNTEC CONSULTANTS
11305 RANCHO BERNARDO RD, STE 101
SAN DIEGO, CA 92127
PHONE: (858) 674-6559
FAX: (858) 674-6586

TYPE OF WORK:
INSTALLATION OF VAPOR WELLS

THOMAS GUIDE:
1190-H3

APPROVED BY:
NAME OF AGENCY
SIGNATURE
DATE:
TITLE

CITY OF POWAY
TRAFFIC CONTROL PLAN FOR:
TYPICAL SCENARIO

SUBSURFACE SURVEYS GEOPHYSICAL REPORTS

SubSurface Surveys & Associates, Inc.
An Applied Geophysical Company

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January 30, 2006

Geosyntec
Attn: Chris Gale
11305 Rancho Bernardo Road,
Suite 101
San Diego, California 92127

Project/Invoice Number 06-040

Re: Geophysical Investigation, Three Borehole Clearances; 14900 Poway Road, Poway, California

This report is to present the results of our geophysical survey carried out over a portion of the abandoned landfill, located at 14900 Poway Road, in Poway, California (Fig. 1) on January 30, 2006. Purpose of the survey was to locate and identify, insofar as possible, piping, conduit, and other buried features that exist near the immediate vicinity of three proposed borehole locations.

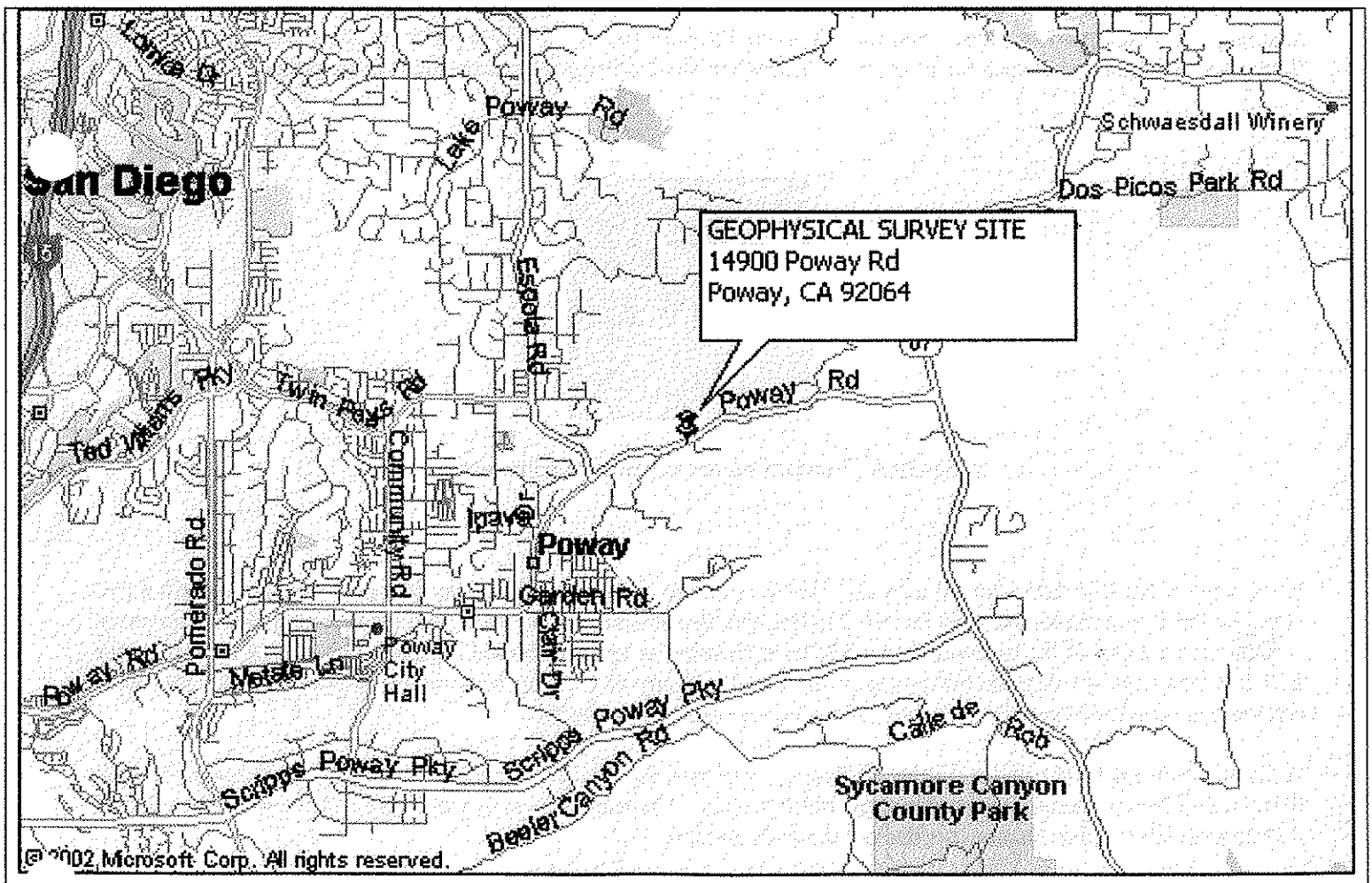

FIGURE 1 –Site Location Map

A combination of electromagnetic induction, EM, magnetometry, and ground penetrating radar, GPR, were applied to the search. A utility locator with line tracing capabilities was also brought to the field and used where risers exist onto which a signal could be impressed and traced.

Multiple methods were utilized because each instrument senses different material properties of the ground and buried objects. At any given site the situation, geologic and cultural, may be such that one or more of the instruments may record excessive "noise", the ground may not provide sufficient contrasts, or there ay be overlapping anomalies, for a given instrument to be effective. Summarily stated, there are generally instrumental limits and interpretational impediments.

Survey Design – The area to be surveyed was indicated in the field by the client to be over a portion of an inactive landfill, and included numerous above-ground cultural objects that could potentially cause interference with the instruments should a formal rectilinear grid for data collection be established. In situations such as this, where cultural objects limit the use of a formal rectilinear grid, the best use of time is achieved by systematically free-traversing with the instruments while monitoring them continuously to determine which responses are significant and due to true subsurface targets, and which are due to above-ground features and must be ignored. The EM61, M-Scope, magnetic gradiometer, line tracer and GPR were traversed systematically over the area along the eight lines of the standard search pattern (Diagram A), wherein, there are two sets of three parallel lines, mutually orthogonal, and two diagonals, all centered on the proposed drill location. Adjacent parallel lines are approximately 5 feet apart, and each line is approximately 20 feet long, access permitting. Other traverses were taken, access permitting, for detailing and confirmation where anomalous conditions were found. Multiple GPR profiles were also collected throughout the area and in specific areas for confirmation where other instruments detected anomalies.

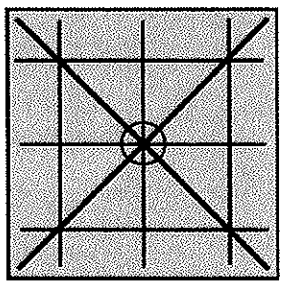

Diagram A: Standard search pattern around borehole

Hard copy of the EM data was not acquired, that is, discrete readings on the nodes of a grid were not recorded that could be put into a contoured map format. Rather, the instruments' meters were read continuously during traverses to detect excursions of the readouts that might have meaning in terms of buried objects. The lack of hard copy for EM data sets does not degrade the quality of the surveys in any way. Hard copy merely provides a basis for report documentation of these geophysical fields, if such documentation is needed.

A Geonic's model EM61 and a Fischer M-Scope, were used for the EM sampling. A Sensors & Software Noggin Ground Penetrating Radar unit produced the radar images. The magnetic gradiometer was a Schonstedt GA-52, and a Metrotech 9890 utility locator rounded out the tools applied.

Brief Description of the Geophysical Methods Applied – The M-Scope device energizes the ground by producing an alternating primary magnetic field with AC current in a transmitting coil. If conducting materials are within the area of influence of the primary field, AC eddy currents are induced to flow in the conductors. A receiving coil senses the secondary magnetic field produced by these eddy currents, and outputs the response as anomalous conditions. The strength of the secondary field is a function of the conductivity of the object, say a pipe, tank or cluster of drums, its size, and its depth and position relative to the instrument's two coils. Conductive objects, to a depth of approximately 7 feet below ground surface (bgs) for the M-Scope are sensed. The device is also somewhat focused; that is, it is more sensitive to conductors below the instrument than they are to conductors off to the side.

The EM61 instrument is a high resolution, time-domain device for detecting buried conductive objects. It consists of a powerful transmitter that generates a pulsed primary magnetic field when its coils are energized, which induces eddy currents in nearby conductive objects. The decay of the eddy currents, following the input pulse, is measured by the coils, which in turn serve as receiver coils. The decay rate is measured for two coils, mounted concentrically, one above the other. By making the measurements at a relatively long time interval (measured in milliseconds) after termination of the primary pulse, the response is nearly independent of the electrical conductivity of the ground. Thus, the instrument is a super-sensitive metal detector. Due to its unique coil arrangement, the response curve is a single well-defined positive peak directly over a buried conductive object. This facilitates quick and accurate location of targets.

The magnetic gradiometer has two flux gate magnetic fixed sensors that are passed closely to and over the ground. When not in close proximity to a magnetic object, that is, only in the earth's field, the instrument emits a sound signal at a low frequency. When the instrument passes over a buried iron or steel object, so that locally there is a high magnetic gradient, the frequency of the emitted sound increases. The frequency is a function of the gradient between the two sensors.

The line locator is used to passively detect energized high voltage electric lines and electrical conduit (50-60 Hz), VLF signals (14-22 kHz), as well as to actively trace other utilities. Where risers are present, the utility locator transmitter can be connected directly to the object, and a signal (9.8-82 kHz) is sent traveling along the conductor, pipe, conduit, etc. In the absence of a riser, the transmitter can be used to impress an input signal on the utility by induction. In either case, the receiver unit is tuned to the input signal, and is used to actively trace the signal along the pipe's surface projection.

The GPR instrument beams energy into the ground from its transducer/antenna, in the form of electromagnetic waves. A portion of this energy is reflected back to the antenna at a boundary in the subsurface across which there is an electrical contrast. The instrument produces a continuous record of the reflected energy as the antenna is traversed across the ground surface. The greater the electrical contrast, the higher the amplitude of the returned energy. The radar wave travels at a velocity unique to the material properties of the ground being investigated, and when these velocities are known, the two-way travel times can be converted to depth. The depth of penetration and image resolution produced are a function of ground electrical conductivity and dielectric constant.

Interpretation and Conclusions - The interpretation took place in real time as the survey progressed, and accordingly, the findings of our investigation were marked on the ground cover at the site. Finally, digital photographs were taken of the site and cleared borehole locations (Figs. 2 & 3). The intent of this document is to demonstrate the procedure, and report the findings of the work.

GPR was especially useful at detecting both metallic and non-metallic lines and utilities. According to principles of physics, radar penetration is a function of soil conductivity and dielectric constant. At this site, local conditions were reasonably favorable for radar penetration due to the nature of the soil and materials covering the survey area. This resulted in radar penetration down to approximately 4.0 – 5.0 feet bgs.

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SITE PHOTOGRAPHS

14900 Poway Road,
Poway, California

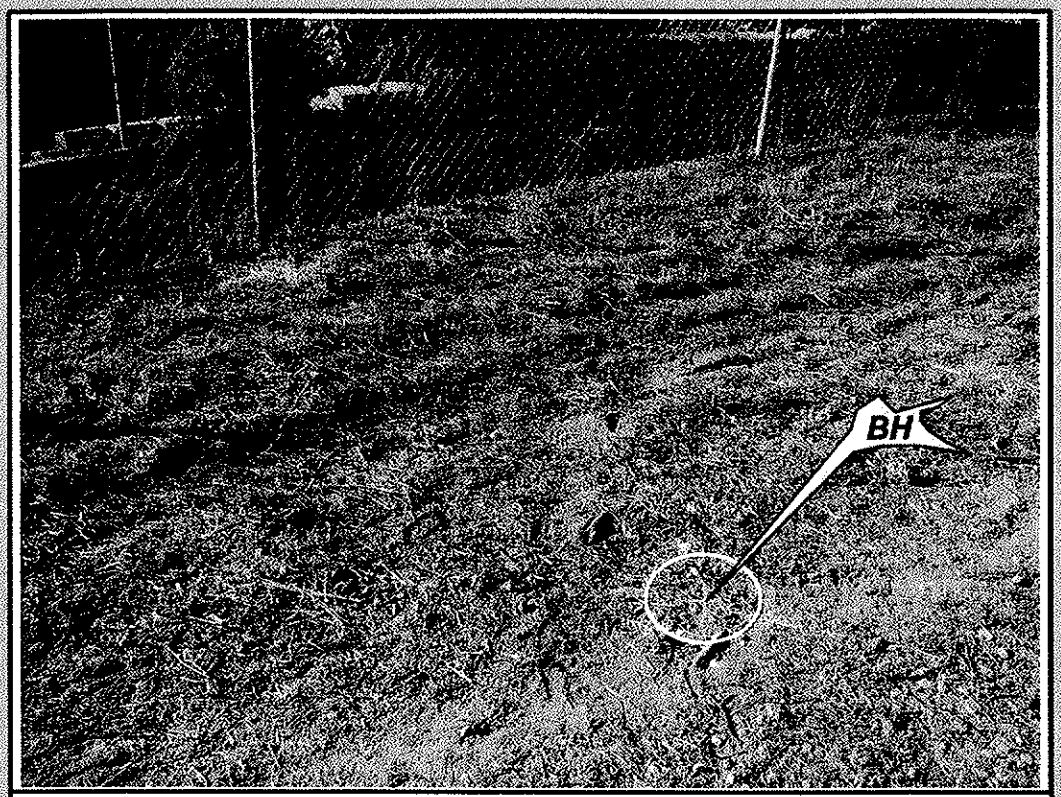

FIGURE 2

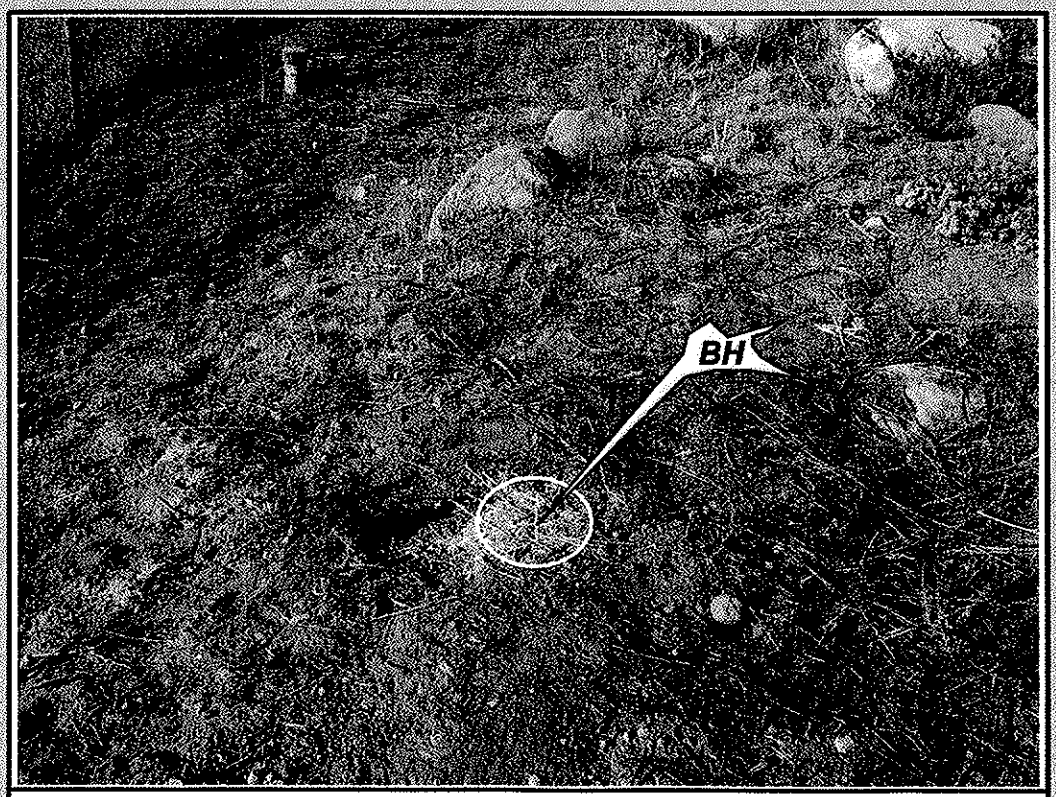

FIGURE 3

Piping and utilities detected during the survey were marked with spray chalk on the ground cover at the site (pink for unknown lines). Once all detectable utilities and anomalies were accounted for, the cleared drill locations were marked in paint with a white label and yellow "SSS" (Figs. 2 & 3). Due to the fact that the survey was conducted within the vicinity of a reinforced concrete drainage basin and chain-link fence, the survey was slightly hindered by background "noise", especially next to the chain-link fence that borders the drainage swale above the residential houses. The unknown line that runs approximately two feet off of the chain-link fence on the two easternmost boreholes was the reason that the borings were moved, and also to provide adequate access for the drill rig (Figs. 2 & 3).

The three proposed boreholes are located on the southern boundary of the landfill in the center of a roughly 24 foot dirt corridor between the landfill's large concrete drainage basin and the chain-link fence above the residential neighborhood (Figs. 2 & 3). The cleared boring location in the southwest corner of the landfill was unremarkable (Fig. 3). The cleared borehole located in the southeast corner of the landfill is approximately seven feet north of an unknown line that was detected with the magnetic gradiometer and confirmed with the M-Scope, however the reference photograph taken of this cleared boring location was corrupted in the data transfer process and couldn't be retrieved. Nearly centered between the two previously mentioned borings on the southern boundary of the landfill, the third cleared borehole location is about eight feet from the unknown line that parallels the chain-link fence (Fig. 2). This intermediate cleared borehole location's photo is very similar to the photo that was lost in data transfer (southeast corner location) and can convey the relative geometry of the un-photographed boring to the detected anomaly (unknown line), because both boreholes are almost exactly the same in this respect.

The three boreholes are interpreted to be clear, and at no point did any of the utilities detected appear to affect future drilling activities associated with the cleared borehole locations. All detected utilities in the survey area were marked out and it was left up to the client to determine if a borehole should be relocated.

Subsurface Survey's professional personnel are trained and experienced and have completed thousands of projects since the companies inception in 1988. It is our policy to work diligently to bring this training and experience to bear to acquire quality data sets, which in turn, can provide clues useful in formulating our interpretations. Still, non-uniqueness of interpretations, methodological limitations, and non-target interferences are prevailing problems. Subsurface Surveys makes no guarantee either expressed or implied regarding the accuracy of the interpretations presented. And, in no event will Subsurface Surveys be liable for any direct, indirect, special, incidental, or consequential damages resulting from interpretations and opinions presented herewith.

All data acquired in these surveys are in confidential file in this office, and are available for review by your staff, or by us at your request, at any time. We appreciate the opportunity to participate in this project. Please call, if there are questions.

David B. Kaufman
Staff Geophysicist

Gary W. Crosby, PhD, GP# 960
Senior Geophysicist

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April 19, 2006

GeoSyntec Consultants, Inc.
11305 Rancho Bernardo Road
Suite 101
San Diego, California 92127

Project/Invoice Number 06-154

Attn: Sean McClain

Re: Geophysical Investigation, Borehole Clearance and Utility Investigation, Vicinity of Poway Landfill, Poway, California

This report is to present the results of our geophysical surveys carried out over portions of residential property located within the vicinity of the Poway Landfill, located in Poway, California (Figure 1) on April 6 and 7, 2006. Purpose of the surveys was to locate and identify, insofar as possible, piping, conduit, and other buried features that exist near the immediate vicinity of 18 proposed boreholes.

A combination of electromagnetic induction, EM, magnetometry, and ground penetrating radar, GPR, were applied to the search. A utility locator with line tracing capabilities was also brought to the field and used where risers exist onto which a signal could be impressed and traced.

Multiple methods were utilized because each instrument senses different material properties of the ground and buried objects. At any given site the situation, geologic and cultural, may be such that one or more of the instruments may record excessive "noise", the ground may not provide sufficient contrasts, or there may be overlapping anomalies, for a given instrument to be effective. Summarily stated, there are generally instrumental limits and interpretational impediments.

Survey Design – Each of the proposed boreholes were located within residential streets and included numerous aboveground cultural objects that could potentially cause interference with the instruments should a formal rectilinear grid for data collection be established. In situations such as this, where cultural objects limit the use of a formal rectilinear grid, the best use of time is achieved by systematically free-traversing with the instruments while monitoring them continuously to determine which responses are significant and due to true subsurface targets, and which are due to above-ground features and must be ignored. The line tracer and GPR were traversed systematically over each of the areas along the eight lines of the standard search pattern (Figure 2), wherein, there are two sets of three parallel lines, mutually orthogonal, and two diagonals, all centered on the marked drill location. Adjacent parallel lines are approximately 5 feet apart, and each line is approximately 20 feet long, access permitting. Other traverses were taken, access permitting, for detailing and confirmation where anomalous conditions were found. Multiple GPR profiles were also collected throughout the area and in specific areas for confirmation where other instruments detected anomalies.

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SITE LOCATION MAP

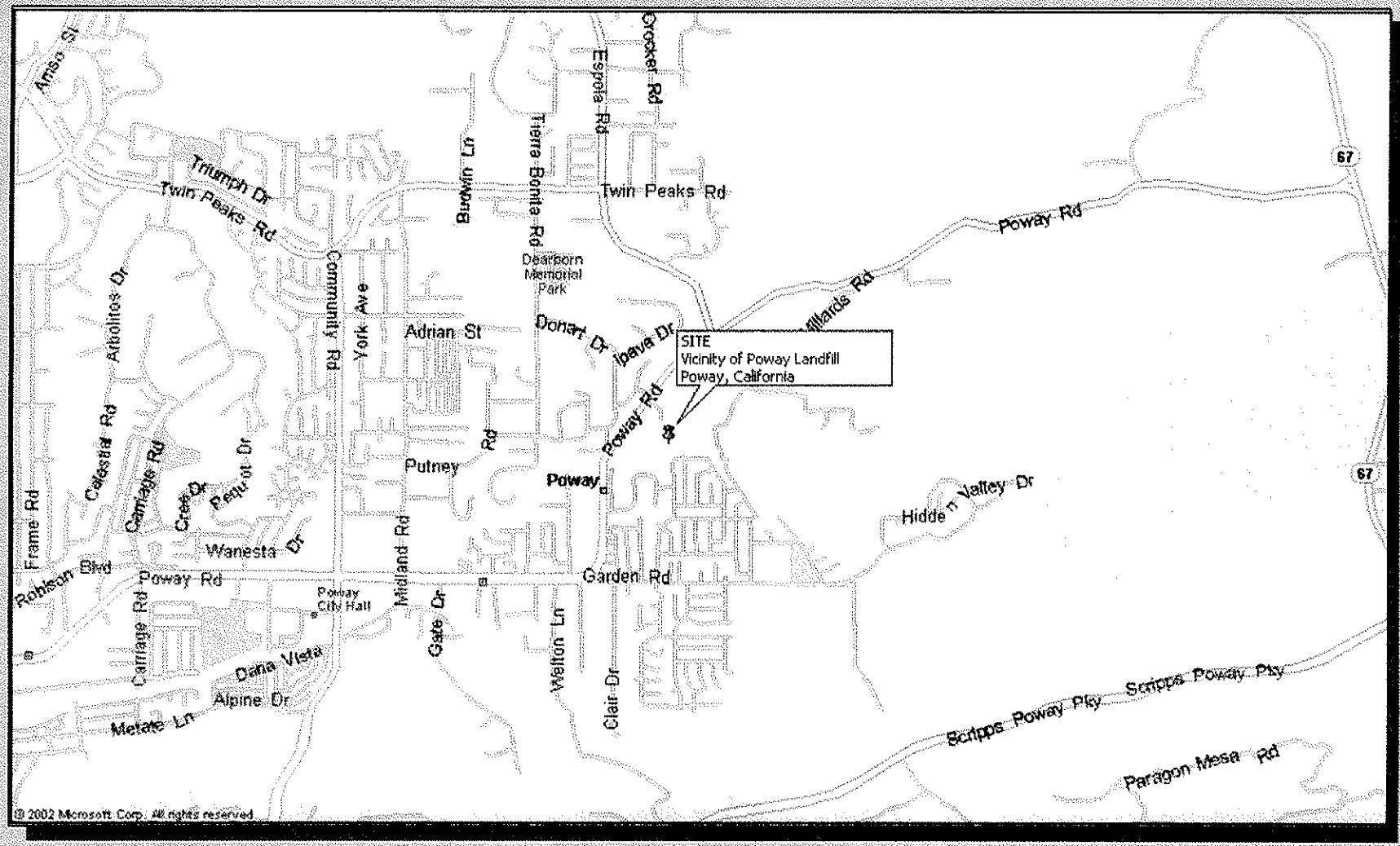

FIGURE 1

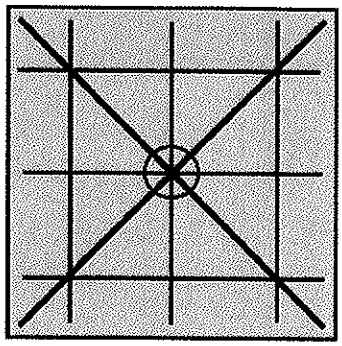

Figure 2: Standard search pattern around borehole

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A Geonic's model EM61, and a Fischer M-Scope, were used for the EM sampling. A Sensors & Software Noggin Ground Penetrating Radar unit produced the radar images, while a Schonstedt GA-52 magnetic gradiometer and a Metrotech 9890 utility locator rounded out the tools applied.

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The EM61 instrument is a high resolution, time-domain device for detecting buried conductive objects. It consists of a powerful transmitter that generates a pulsed primary magnetic field when its coils are energized, which induces eddy currents in nearby conductive objects. The decay of the eddy currents, following the input pulse, is measured by the coils, which in turn serve as receiver coils. The decay rate is measured for two coils, mounted concentrically, one above the other. By making the measurements at a relatively long time interval (measured in milliseconds) after termination of the primary pulse, the response is nearly independent of the electrical conductivity of the ground. Thus, the instrument is a super-sensitive metal detector. Due to its unique coil arrangement, the response curve is a single well-defined positive peak directly over a buried conductive object. This facilitates quick and accurate location of targets.

The magnetic gradiometer has two flux gate magnetic fixed sensors that are passed closely to and over the ground. When not in close proximity to a magnetic object, that is, only in the earth's field, the instrument emits a sound signal at a low frequency. When the instrument passes over a buried iron or steel object, so that locally there is a high magnetic gradient, the frequency of the emitted sound increases. The frequency is a function of the gradient between the two sensors.

The line locator is used to passively detect energized high voltage electric lines and electrical conduit (50-60 Hz), VLF signals (14-22 kHz), as well as to actively trace other utilities. Where risers are present, the utility locator transmitter can be connected directly to the object, and a signal (9.8-82 kHz) is sent traveling along the conductor, pipe, conduit, etc. In the absence of a riser, the transmitter can be used to impress an input signal on the utility by induction. In either case, the receiver unit is tuned to the input signal, and is used to actively trace the signal along the pipe's surface projection.

The GPR instrument beams energy into the ground from its transducer/antenna, in the form of electromagnetic waves. A portion of this energy is reflected back to the antenna at a boundary in the subsurface across which there is an electrical contrast. The instrument produces a continuous record of the reflected energy as the antenna is traversed across the ground surface. The greater the electrical contrast, the higher the amplitude of the returned energy. The radar wave travels at a velocity unique to the material properties of the ground being investigated, and when these velocities are known, the two-way travel times can be converted to depth. The depth of penetration and image resolution produced are a function of ground electrical conductivity and dielectric constant.

Interpretation and Conclusions - The interpretation took place in real time as the survey progressed, and accordingly, the findings of our investigation were marked on the ground cover at the site. The intent of this document is to demonstrate the procedure, and report the findings of the work.

GPR was especially useful at detecting both metallic and non-metallic lines and utilities. According to principles of physics, radar penetration is a function of soil conductivity and dielectric constant. At this site, local conditions were reasonably favorable for radar penetration due to the nature of the soil and materials covering the survey areas. This resulted in radar penetration down to approximately 2.5 to 3.0 feet bgs.

Piping and utilities detected during the survey were marked with spray chalk on the ground cover at the site (red for electric, blue for water, yellow for natural gas, orange for communications, green for sanitary sewer/storm drain, and white for unknown) (Figures 4-23). Once all detectable utilities and anomalies were accounted for, the proposed boreholes were marked with a white circle and a yellow "SSS" (Figures 4-16).

Figures 19, 21, 22 and 23 illustrate a large storm drain line, an additional smaller suspected sewer line, and a water main detected within the survey area. While the depth of the large storm drain line made it difficult to pinpoint with the radar, visual observations and logical estimates were primarily used to determine its path. Additionally, the portion of the water main illustrated in Figure 23 is represented with a "?" to note that this portion of the line was inferred due to weak signal reception. Finally, all detected utilities in the survey areas were marked out and it was left up to the client to determine if the boreholes should be relocated.

Subsurface Survey's professional personnel are trained and experienced and have completed thousands of projects since the company's inception in 1988. It is our policy to work diligently to bring this training and experience to bear to acquire quality data sets, which in turn, can provide clues useful in formulating our interpretations. Still, non-uniqueness of interpretations, methodological limitations, and non-target interferences are prevailing problems. Subsurface Surveys makes no guarantee either expressed or implied regarding the accuracy of the interpretations presented. And, in no event will Subsurface Surveys be liable for any direct, indirect, special, incidental, or consequential damages resulting from interpretations and opinions presented herewith.

All data acquired in these surveys are in confidential file in this office, and are available for review by your staff, or by us at your request, at any time. We appreciate the opportunity to participate in this project. Please call, if there are questions.

Sub Surface Surveys

BOREHOLE PHOTOGRAPHS

Vicinity of Poway Landfill
Poway, California

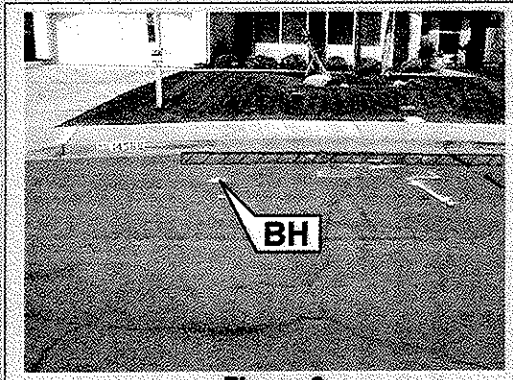

Figure 3

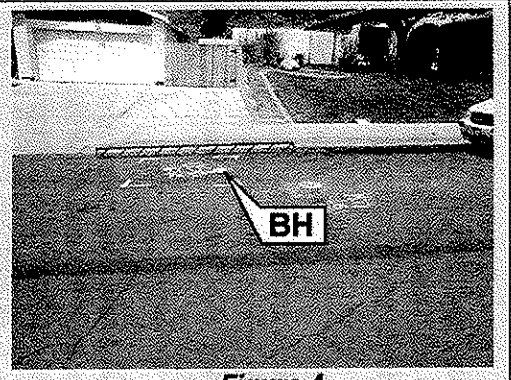

Figure 4

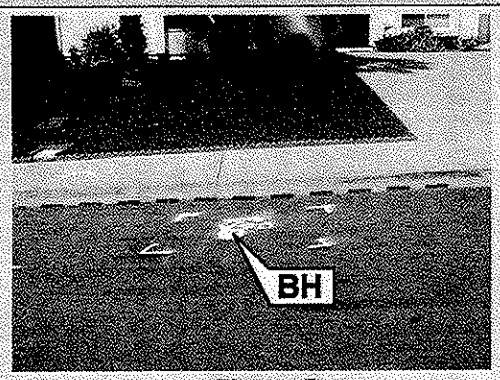

Figure 5

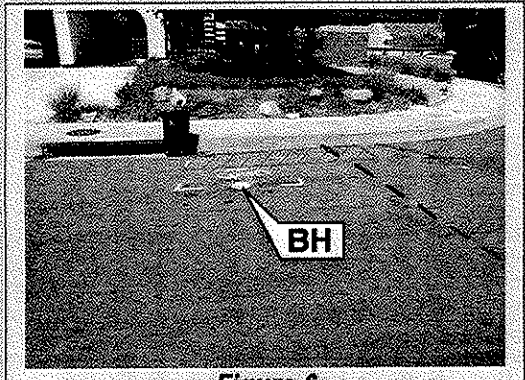

Figure 6

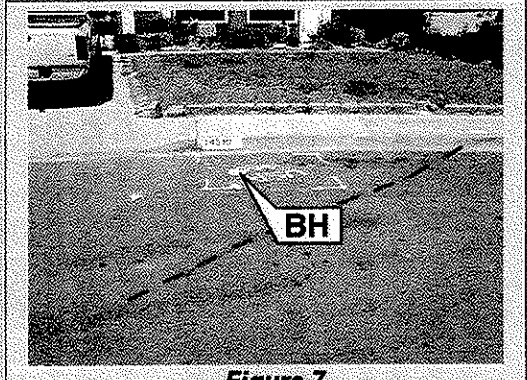

Figure 7

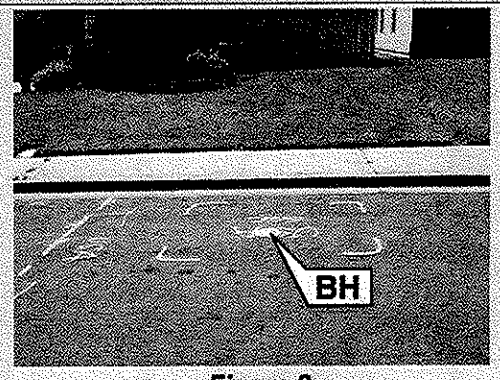

Figure 8

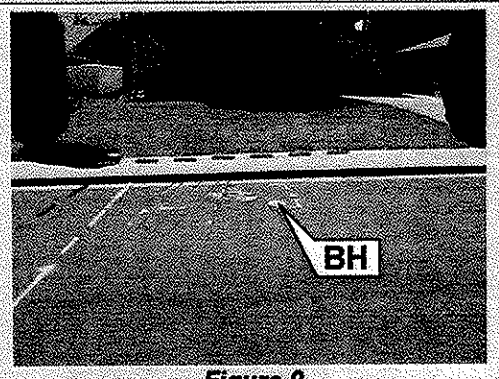

Figure 9

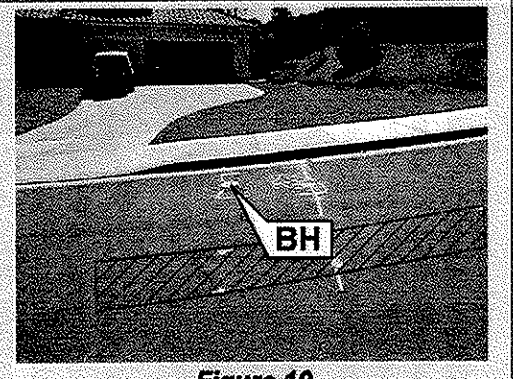

Figure 10

Figure 11

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BOREHOLE PHOTOGRAPHS

Vicinity of Poway Landfill
Poway, California

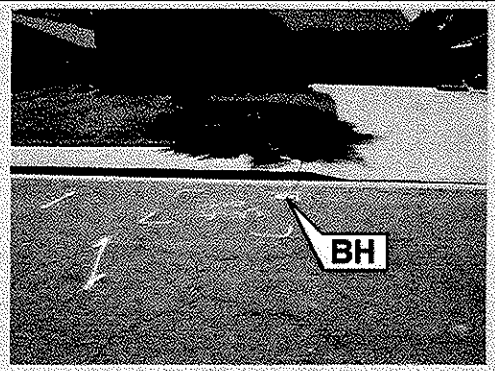

Figure 12

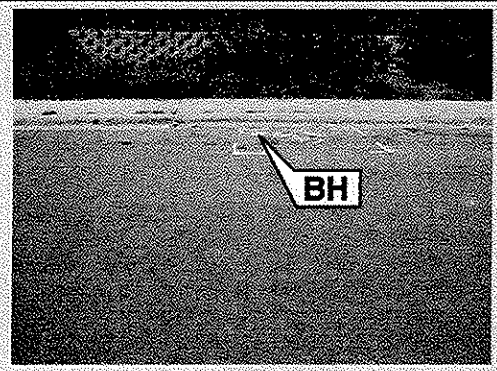

Figure 13

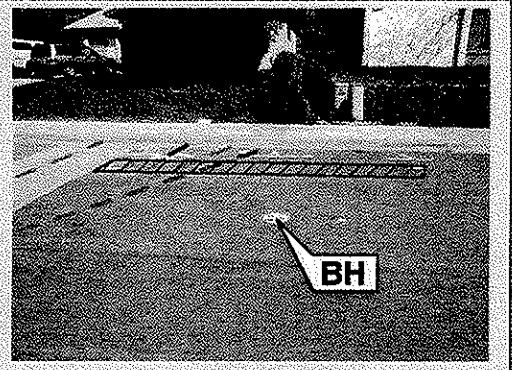

Figure 14

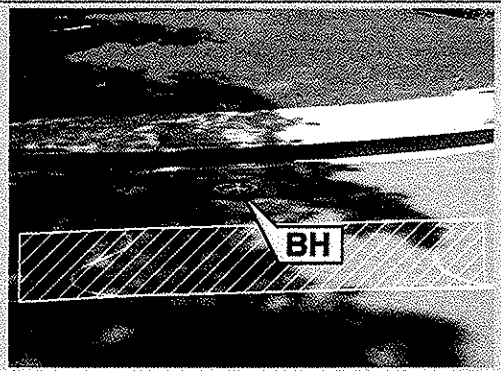

Figure 15

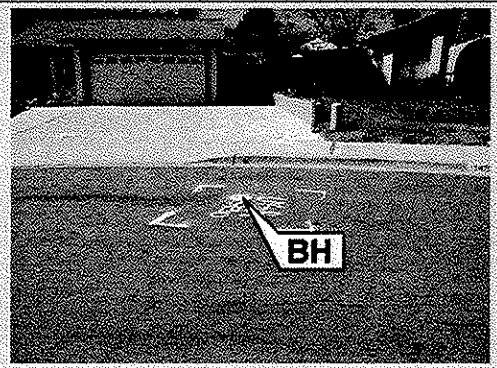

Figure 16

Figure 17

Figure 18

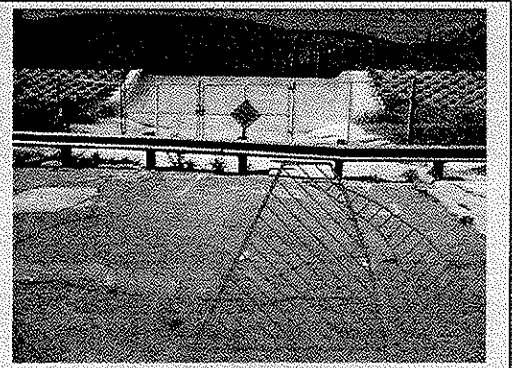

Figure 19

Figure 20

Sub Surface Surveys

SITE PHOTOGRAPHS

Vicinity of Poway Landfill
Poway, California

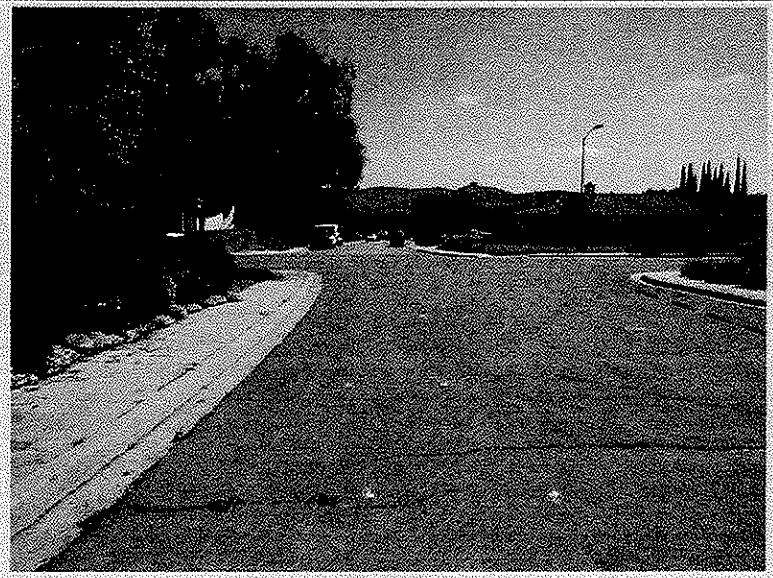

Figure 21

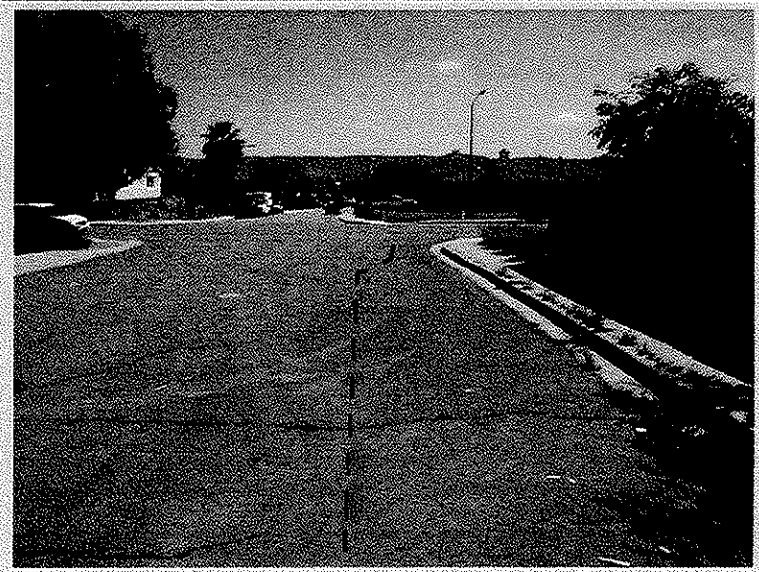

Figure 22

Figure 23

Ryan T. Merkey
Project Manager

Gary W. Crosby, PhD, GP# 960
Senior Geophysicist

SubSurface Surveys
& Associates, Inc.
An Applied Geophysical Company

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April 21st, 2006

GeoSyntec Consultants, Inc.
11305 Rancho Bernardo Road, Suite 101
San Diego, CA 92127

Project/Invoice Number: 06-114

Attn: **Sean McClain**
Re: Geophysical Survey at Poway Landfill, 14900 Poway Blvd, Poway, California

This letter report is to present the results of our geophysical surveying carried out over portions of the Poway Landfill located at 14900 Poway Blvd in Poway, California on March 17th, 2006 (Figure 1). The purpose of the survey was to locate and identify, insofar as possible, piping, conduit, and other buried features that exist in the immediate vicinity of four (4) proposed boreholes.

A combination of electromagnetic induction (EM), magnetometry, and ground penetrating radar (GPR), was applied to the search. A utility locator with line tracing capabilities was also brought to the field and used where risers existed onto which a signal could be impressed and traced.

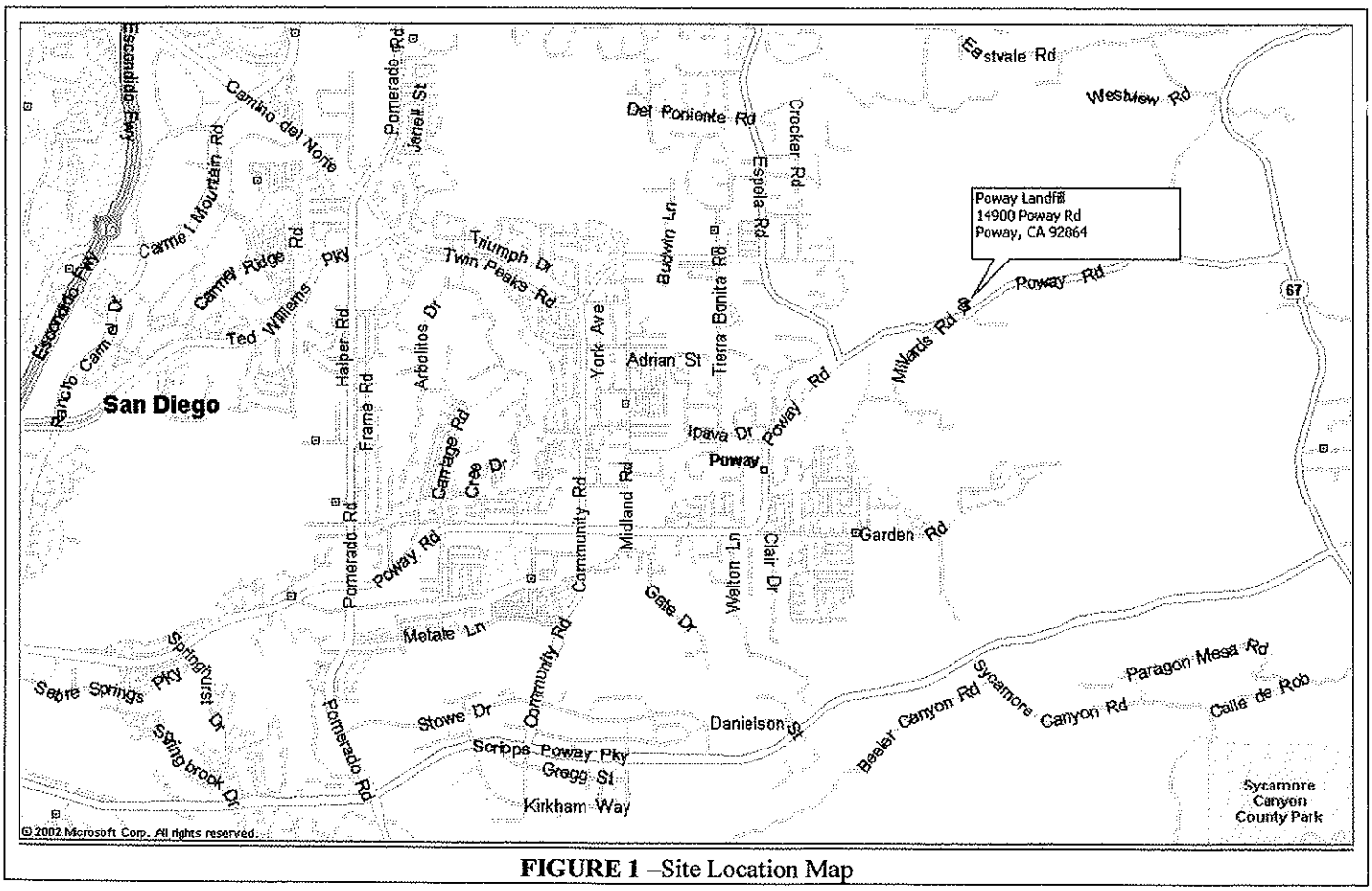

FIGURE 1 –Site Location Map

Multiple methods were utilized because each instrument senses different material properties of the ground and buried objects. At any given site the situation, geologic and cultural, may be such that one or more of the instruments may record excessive "noise", the ground may not provide sufficient contrasts, or there may be overlapping anomalies, for a given instrument to be effective. Summarily stated, there are generally instrumental limits and interpretational impediments.

Survey Design – Four proposed boreholes were marked out on the ground surface by the client. All four boreholes were located onsite.

All geophysical instruments were systematically free traversed in many directions over the proposed borehole locations. The line tracer was also used to trace out all detectable utilities in the area. After all the detectable lines/utilities were marked out, the proposed borehole was remarked out, if required, in a safe location on the ground surface.

Hard copy of the EM and magnetic gradient data were not acquired for the borehole clearances, that is, discrete readings on the nodes of a grid were not recorded that could be put into a contoured map format. Rather, the instruments' meters were read continuously during traverses to detect excursions of the readouts that might have meaning in terms of buried objects. The lack of hard copy for EM and magnetic data sets does not degrade the quality of the surveys in any way. Hard copy merely provides a basis for report documentation of these geophysical fields, if such documentation is needed.

A Geonic's model EM61, and a Fischer M-Scope, were used for the EM sampling. A Sensors and Software Noggin Ground Penetrating Radar unit coupled with a 500-MHz antenna produced the radar images. The magnetic gradiometer was a Schonstedt GA-52, and a Metrotech 9890 utility locator rounded out the tools applied.

Brief Description of the Geophysical Methods Applied - The EM61 instrument is a high resolution, time-domain device for detecting buried conductive objects. It consists of a powerful transmitter that generates a pulsed primary magnetic field when its coils are energized, which induces eddy currents in nearby conductive objects. The decay of the eddy currents, following the input pulse, is measured by the coils, which in turn serve as receiver coils. The decay rate is measured for two coils, mounted concentrically, one above the other. By making the measurements at a relatively long time interval (measured in milliseconds) after termination of the primary pulse, the response is nearly independent of the electrical conductivity of the ground. Thus, the instrument is a super-sensitive metal detector. Due to its unique coil arrangement, the response curve is a single well defined positive peak directly over a buried conductive object. This facilitates quick and accurate location of targets.

The M-Scope device energizes the ground by producing an alternating primary magnetic field with AC current in a transmitting coil. If conducting materials are within the area of influence of the primary field, AC eddy currents are induced to flow in the conductors. A receiving coil senses the secondary magnetic field produced by these eddy currents, and outputs the response to a meter in the form of ground conductivity values for the M-Scope. The strength of the secondary field is a function of the conductivity of the object, say a pipe, tank or cluster of drums, its size, and its depth and position relative to the instrument's two coils. Conductive objects, to a depth of approximately 7 feet for the M-Scope are sensed. The device is also somewhat focused; that is, it is more sensitive to conductors below the instrument than it is to conductors off to the side.

The magnetic gradiometer has two flux gate magnetic fixed sensors that are passed closely to and over the ground. When not in close proximity to a magnetic object, that is, only in the earth's field, the instrument emits a sound signal at a low frequency. When the instrument passes over a buried iron or steel object, so that locally there is a high magnetic gradient, the frequency of the emitted sound increases. The frequency is a function of the gradient between the two sensors.

The line locator is used to passively detect energized high voltage electric lines and electrical conduit (50-60 Hz), VLF signals (14-22 kHz), as well as to actively trace other utilities. Where risers are present, the utility locator transmitter can be connected directly to the object, and a signal (9.8-82 kHz) is sent traveling along the conductor, pipe, conduit, etc. In the absence of a riser, the transmitter can be used to impress an input signal on the utility by induction. In either case, the receiver unit is tuned to the input signal, and is used to actively trace the signal along the pipe's surface projection.

The GPR instrument beams energy into the ground from its transducer/antenna, in the form of electromagnetic waves. A portion of this energy is reflected back to the antenna at a boundary in the subsurface across which there is an electrical contrast. The instrument produces a continuous record of the reflected energy as the antenna is traversed across the ground surface. The greater the electrical contrast, the higher the amplitude of the returned energy. The radar wave travels at a velocity unique to the material properties of the ground being investigated, and when these velocities are known, the two-way travel times can be converted to depth. The depth of penetration and image resolution produced are a function of ground electrical conductivity and dielectric constant.

Interpretation and Conclusions - The interpretation took place in real time as the survey progressed, and accordingly, the findings of our investigation were painted on the ground cover at the survey site and documented with digital photographs (figures 2 - 5). The intent of this document is to demonstrate the procedure, and report the findings of the work.

The GPR was useful in locating nonmetallic pipes and utilities as well as confirming the existence and locations of metallic pipes and objects detected with other geophysical instruments. Radar penetration is a function of soil conductivity and dielectric constant. At this site local conditions was unfavorable, resulting in radar penetration down to approximately 2 feet below the ground surface. It should be noted that due to the heterogeneous nature of the soils, the depth of radar penetration might vary from one area to another.

The proposed borehole shown in figure 2 was moved a couple feet to the west to avoid an unknown line imaged with GPR, also note the electric line that was detected 4 feet to the west of the replaced borehole. The proposed borehole shown in figure 3 was moved a couple feet to the south to avoid an unknown line detected with the M-Scope. The remaining proposed boreholes were safe where originally marked and were not moved.

Once all detectable utilities and anomalies were delineated, the proposed boreholes were marked out in safe locations, at least three feet from any detected anomaly, with a white circle and a yellow "SSS".

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BOREHOLE PHOTOGRAPHS

Poway Landfill
14900 Poway Road, Poway, CA

FIGURE 2

FIGURE 3

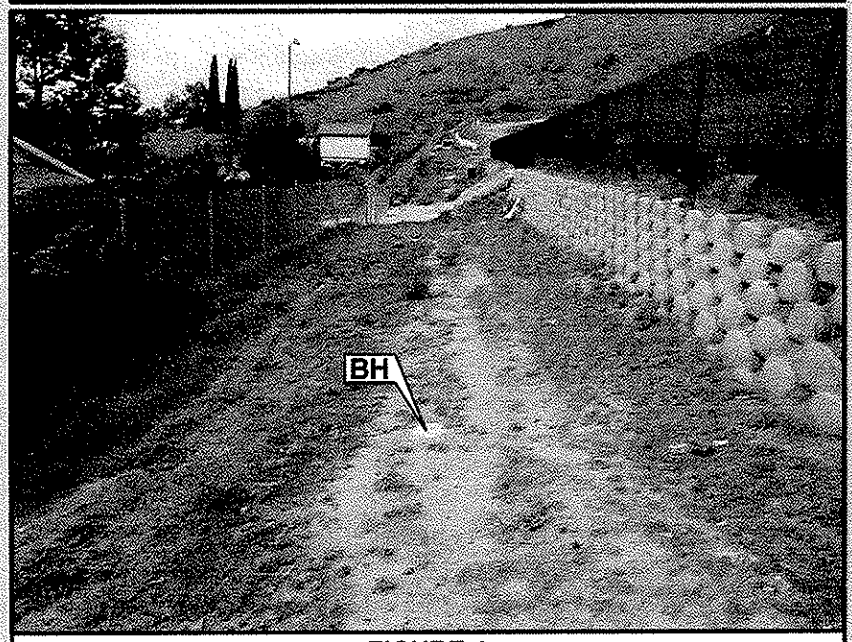

FIGURE 4

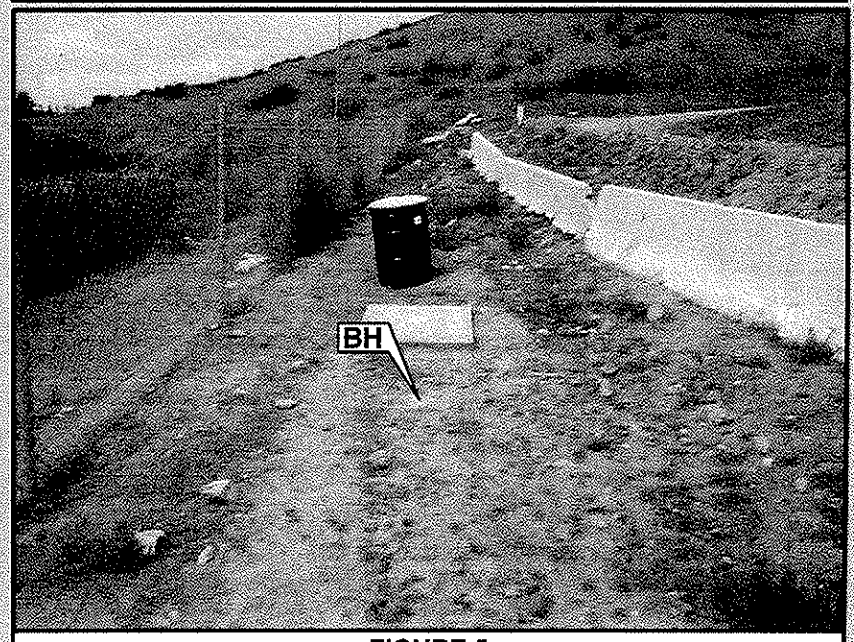

FIGURE 5

Subsurface Survey & Associates' professional personnel are trained and experienced and have completed thousands of projects since the company's inception in 1988. It is our policy to work diligently to bring this training and experience to bear to acquire quality data sets, which in turn, can provide clues useful in formulating our interpretations. Still, non-uniqueness of interpretations, methodological limitations, and non-target interferences are prevailing problems. Subsurface Surveys makes no guarantee either expressed or implied regarding the accuracy of the interpretations presented. And, in no event will Subsurface Surveys be liable for any direct, indirect, special, incidental, or consequential damages resulting from data sets and interpretations presented herewith.

All data acquired in these surveys are in confidential file in this office, and are available for review by your staff, or by us at your request, at any time. We appreciate the opportunity to participate in this project. Please call, if there are questions.

George E. Herman IV
Staff geophysicist/geologist

Gary W. Crosby, PhD, GP 969
Senior Geophysicist/Geologist

SubSurface Surveys
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An Applied Geophysical Company

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Office: (760) 476-0492
Fax: (760) 476-0493

May 1, 2006

GeoSyntec Consultants, Inc.
11305 Rancho Bernardo Road
Suite 101
San Diego, California 92127

Project/Invoice Number 06-178

Attn: Sean McClain

Re: Geophysical Investigation, Borehole Clearance, Vicinity of Poway Landfill, Poway, California

This report is to present the results of our geophysical survey carried out over portions of residential property located within the vicinity of the Poway Landfill, located in Poway, California (Figure 1) on 27 April 2006. Purpose of the survey was to locate and identify, insofar as possible, piping, conduit, and other buried features that exist near the immediate vicinity of 3 proposed boreholes.

A combination of electromagnetic induction, EM, magnetometry, and ground penetrating radar, GPR, were applied to the search. A utility locator with line tracing capabilities was also brought to the field and used where risers exist onto which a signal could be impressed and traced.

Multiple methods were utilized because each instrument senses different material properties of the ground and buried objects. At any given site the situation, geologic and cultural, may be such that one or more of the instruments may record excessive "noise", the ground may not provide sufficient contrasts, or there may be overlapping anomalies, for a given instrument to be effective. Summarily stated, there are generally instrumental limits and interpretational impediments.

Survey Design – Each of the proposed boreholes were located within residential streets and included numerous aboveground cultural objects that could potentially cause interference with the instruments should a formal rectilinear grid for data collection be established. In situations such as this, where cultural objects limit the use of a formal rectilinear grid, the best use of time is achieved by systematically free-traversing with the instruments while monitoring them continuously to determine which responses are significant and due to true subsurface targets, and which are due to above-ground features and must be ignored. The line tracer and GPR were traversed systematically over each of the areas along the eight lines of the standard search pattern (Figure 2), wherein, there are two sets of three parallel lines, mutually orthogonal, and two diagonals, all centered on the marked drill location. Adjacent parallel lines are approximately 5 feet apart, and each line is approximately 20 feet long, access permitting. Other traverses were taken, access permitting, for detailing and confirmation where anomalous conditions were found. Multiple GPR profiles were also collected throughout the area and in specific areas for confirmation where other instruments detected anomalies.

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SITE LOCATION MAP

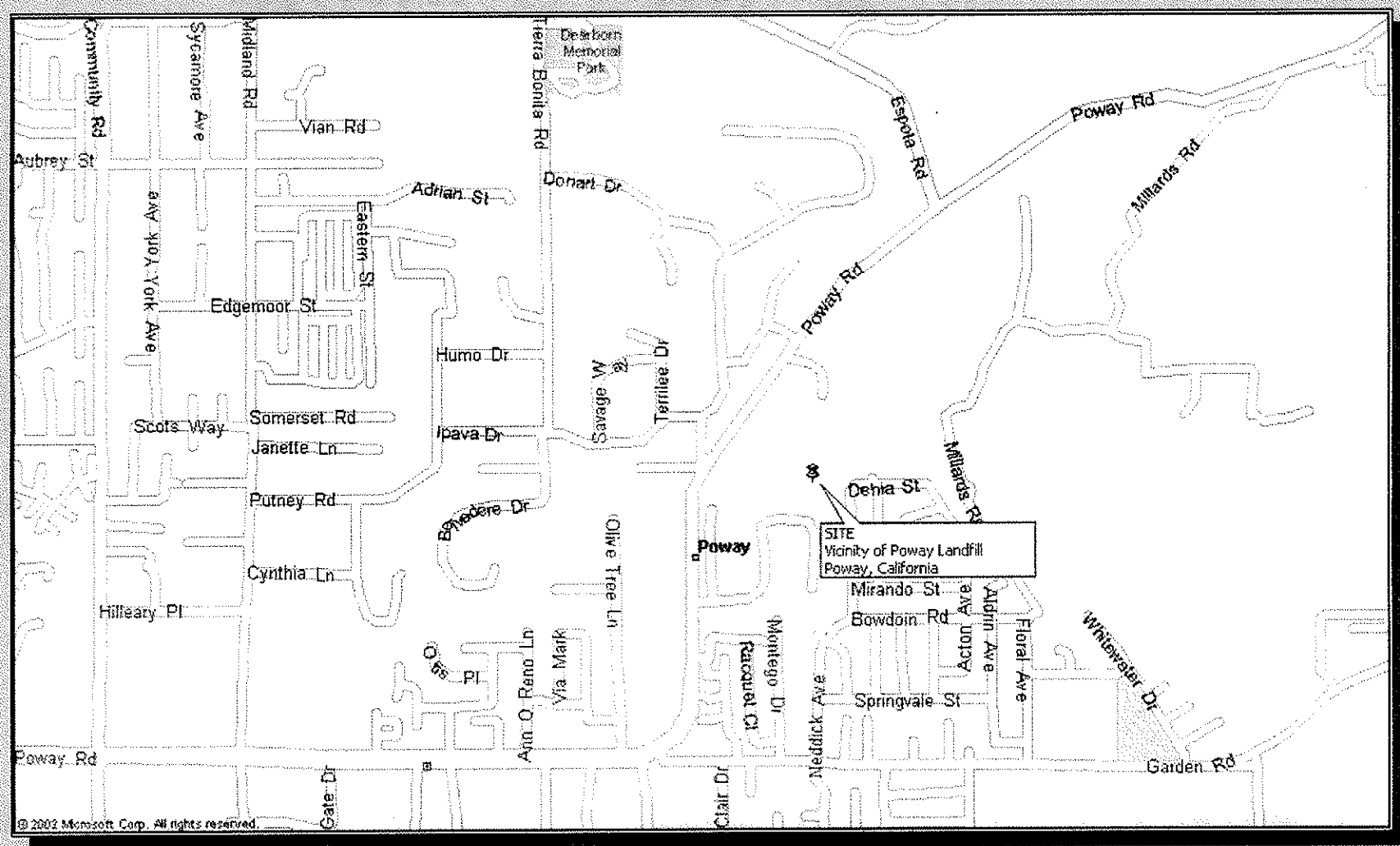

FIGURE 1

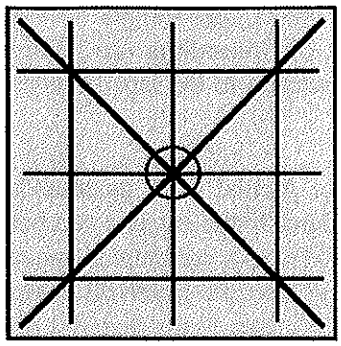

Figure 2: Standard search pattern around borehole

Hard copy of the EM data was not acquired, that is, discrete readings on the nodes of a grid were not recorded that could be put into a contoured map format. Rather, the instruments' meters were read continuously during traverses to detect excursions of the readouts that might have meaning in terms of buried objects. The lack of hard copy for EM data sets does not degrade the quality of the surveys in any way. Hard copy merely provides a basis for report documentation of these geophysical fields, if such documentation is needed.

A Geonic's model EM61, and a Fischer M-Scope, were used for the EM sampling. A Sensors & Software Noggin Ground Penetrating Radar unit produced the radar images, while a Schonstedt GA-52 magnetic gradiometer and a Metrotech 9890 utility locator rounded out the tools applied.

Brief Description of the Geophysical Methods Applied – The M-Scope device energizes the ground by producing an alternating primary magnetic field with AC current in a transmitting coil. If conducting materials are within the area of influence of the primary field, AC eddy currents are induced to flow in the conductors. A receiving coil senses the secondary magnetic field produced by these eddy currents, and outputs the response as anomalous conditions. The strength of the secondary field is a function of the conductivity of the object, say a pipe, tank or cluster of drums, its size, and its depth and position relative to the instrument's two coils. Conductive objects, to a depth of approximately 7 feet below ground surface (bgs) for the M-Scope are sensed. The device is also somewhat focused; that is, it is more sensitive to conductors below the instrument than they are to conductors off to the side.

The EM61 instrument is a high resolution, time-domain device for detecting buried conductive objects. It consists of a powerful transmitter that generates a pulsed primary magnetic field when its coils are energized, which induces eddy currents in nearby conductive objects. The decay of the eddy currents, following the input pulse, is measured by the coils, which in turn serve as receiver coils. The decay rate is measured for two coils, mounted concentrically, one above the other. By making the measurements at a relatively long time interval (measured in milliseconds) after termination of the primary pulse, the response is nearly independent of the electrical conductivity of the ground. Thus, the instrument is a super-sensitive metal detector. Due to its unique coil arrangement, the response curve is a single well-defined positive peak directly over a buried conductive object. This facilitates quick and accurate location of targets.

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Interpretation and Conclusions - The interpretation took place in real time as the survey progressed, and accordingly, the findings of our investigation were marked on the ground cover at the site. The intent of this document is to demonstrate the procedure, and report the findings of the work.

GPR was especially useful at detecting both metallic and non-metallic lines and utilities. According to principles of physics, radar penetration is a function of soil conductivity and dielectric constant. At this site, local conditions were reasonably favorable for radar penetration due to the nature of the soil and materials covering the survey areas. This resulted in radar penetration down to approximately 2.5 to 3.0 feet bgs.

Piping and utilities detected during the survey were marked with spray chalk on the ground cover at the site (red for electric, blue for water, yellow for natural gas, orange for communications, green for sanitary sewer/storm drain, and white for unknown). Once all detectable utilities and anomalies were accounted for, the proposed boreholes were marked with a white circle and a yellow "SSS" (Figures 4-6).

Each borehole was positioned, at a minimum, 5 feet from all detectable utilities and/or anomalies. Finally, all detected utilities in the survey areas were marked out and it was left up to the client to determine if the boreholes should be relocated.

Subsurface Survey's professional personnel are trained and experienced and have completed thousands of projects since the company's inception in 1988. It is our policy to work diligently to bring this training and experience to bear to acquire quality data sets, which in turn, can provide clues useful in formulating our interpretations. Still, non-uniqueness of interpretations, methodological limitations, and non-target interferences are prevailing problems. Subsurface Surveys makes no guarantee either expressed or implied regarding the accuracy of the interpretations presented. And, in no event will Subsurface Surveys be liable for any direct, indirect, special, incidental, or consequential damages resulting from interpretations and opinions presented herewith.

All data acquired in these surveys are in confidential file in this office, and are available for review by your staff, or by us at your request, at any time. We appreciate the opportunity to participate in this project. Please call, if there are questions.

Ryan T. Merkey
Project Manager

Gary W. Crosby, PhD, GP# 960
Senior Geophysicist

Sub Surface Surveys

BOREHOLE PHOTOGRAPHS

Vicinity of Poway Landfill
Poway, California

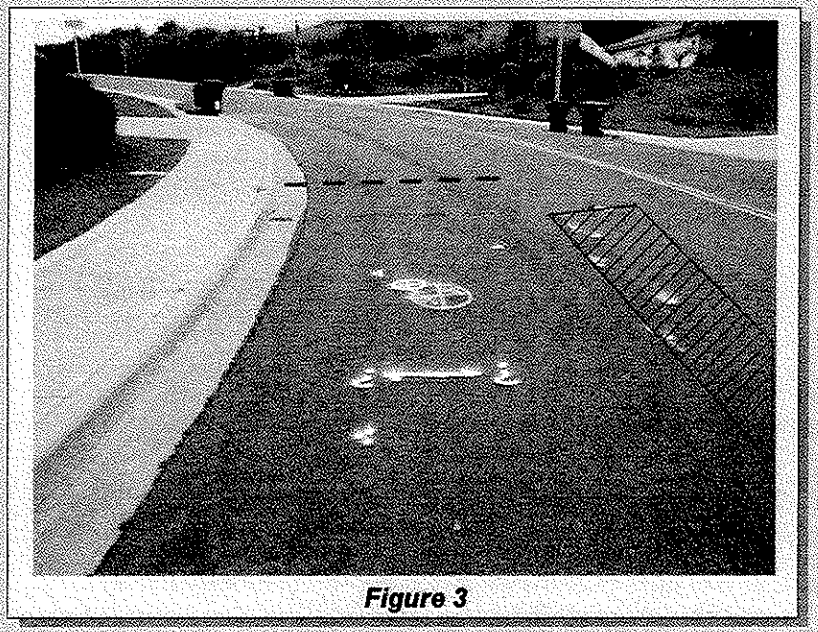

Figure 3

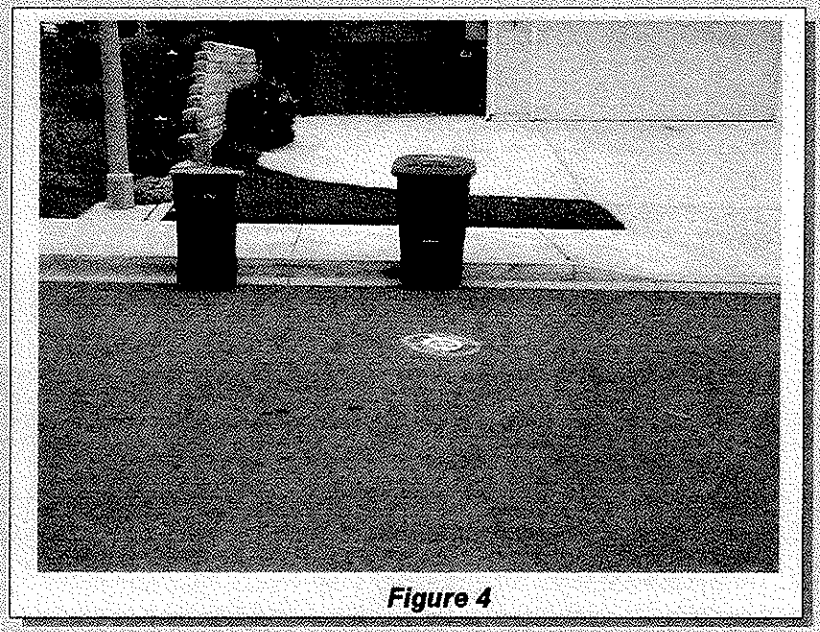

Figure 4

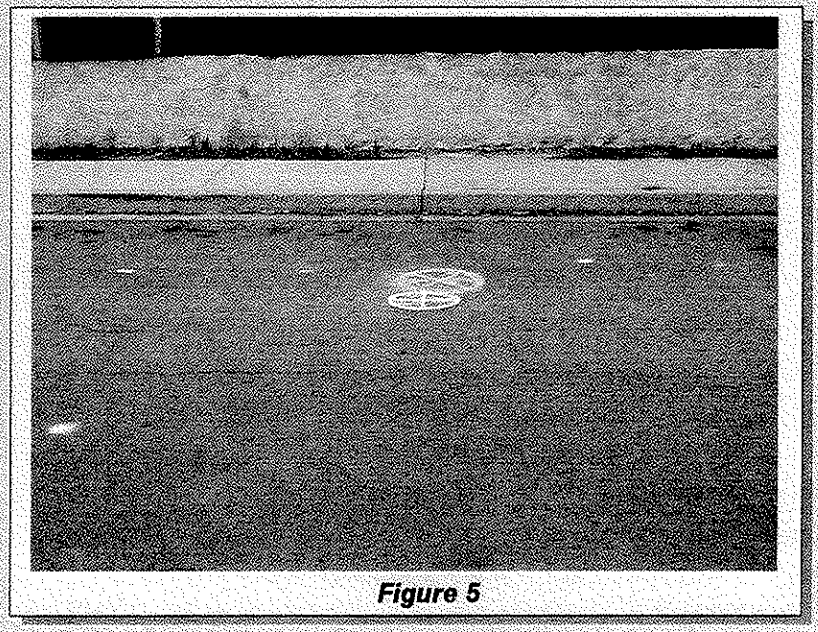

Figure 5